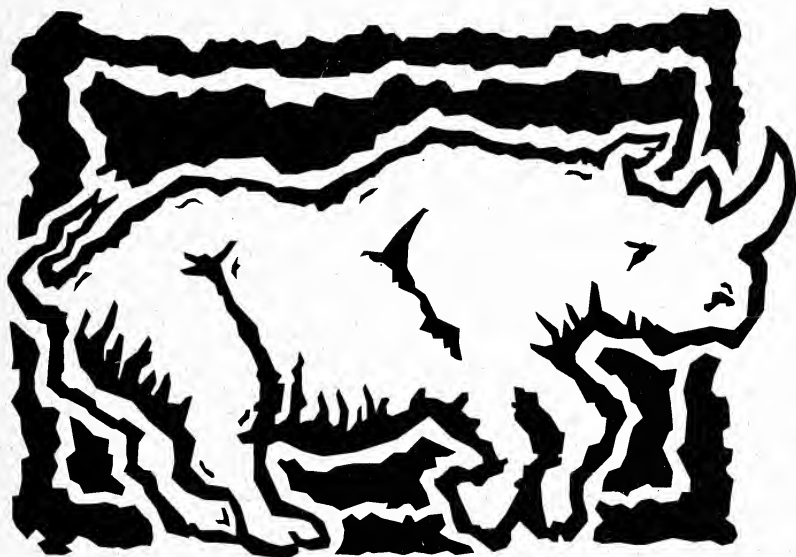


ANIMAL KEEPERS' **F O R U M**



AMERICAN **ASSOCIATION** **of ZOO KEEPERS**

**The Journal of the American
Association of Zoo Keepers, Inc.**

JANUARY 2004

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Animal Keepers' Forum is published monthly by the American Association of Zoo Keepers, Inc., 3601 S.W. 29th Street, Suite 133, Topeka, KS 6661-2054. Ten dollars of each membership fee goes toward the annual publication costs of Animal Keepers' Forum. Postage paid at Topeka, KS.

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AAZK Enrichment Notebook 3rd Edition - Lee Houts, Folsom City Zoo

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About the Cover.....

This month's cover features the brand new logo for the Association! It was designed by Amy Burgess from Disney's Animal Kingdom, Lake Buena Vista, FL. When the AAZK Board of Directors decided it was time to update the Association's logo, a number of past AKF cover artists were asked to submit designs for consideration. At the Board meetings held in conjunction with the Cleveland 2003 National Conference, a design was selected and we are pleased to present it to you in this first issue of 2004. Our thanks to all the artists who submitted design ideas, and special thanks to Amy for her wonderful design concept. Members can look forward to seeing our new logo on a merchandise line in the future.

Animal Keepers' Forum publishes original papers and news items of interest to the animal keeping profession. Non-members are welcome to submit articles for consideration. Articles should be typed or hand-printed and double-spaced. Authors are encouraged to submit their manuscripts on a disk as well as in hard copy form. Manuscripts submitted either on disk or electronically as attachments to an email should be submitted in Microsoft WORD. All illustrations, graphs, charts and tables should be clearly marked, in final form and should fit in a page size **no greater than 5.5" x 8.5"** (14cm x 22cm). Literature used should be cited in the text (Brown, 1986) and alphabetically in the final bibliography. Avoid footnotes. Include scientific name (as per ISIS) the first time an animal name is used. Thereafter use common name. Use metric system for weights and measurements (standard equivalents may be noted in parenthesis). Use the continental dating system (day-month-year). Times should be listed as per the 24-hour clock (0800, 1630 hrs. etc.). Glossy black and white or color prints (minimum size 3" x 5" [8cm x 14cm]) are accepted. Clearly marked captions should accompany photos. Please list photo credit on back of photo. Photographs may be submitted electronically as either JPEG or TIFF file attachments.

Articles sent to *Animal Keepers' Forum* will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for *AKF*. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the editor. The editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed, appropriately-sized envelope. Telephone, fax or email contributions of late-breaking news or last-minute insertions are accepted as space allows. Phone 1-800-242-4519 (US); 1-800-468-1966 (Canada); FAX (785) 273-1980; email is akfeditor@zk.kscoxmail.com<

Deadline for each regular issue is the 10th of the preceding month.

Dedicated issues may have separate deadline dates and will be noted by the editor.

Articles printed do not necessarily reflect the opinions of the *AKF* staff or the American Association of Zoo Keepers, Inc. Publication does not indicate endorsement by the Association.

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E-Mail Addresses: You may reach Barbara Manspeaker at AAZK Administrative Offices at: aazkoffice@zk.kscoxmail.com< You may reach Susan Chan and *Animal Keepers' Forum* at: akfeditor@zk.kscoxmail.com<

AAZK Website Address: www.aazk.org

BFR Website: <http://bfr.aazk.org>

Scoops & Scuttlebutt



From the Editor

The year 2004 marks the 30th year of continuous publication for *Animal Keepers' Forum*. I have been editor of *AKF* for nearly 23 of those 30 years. There have been many changes over the past 30 years--not only with this journal, but with the zoo keeping profession as well. I want to take this opportunity to thank all of you who have been contributors to *AKF* over the years, for without your willingness to share your knowledge and expertise, there would be no journal. We have hopefully all learned a lot from each other over the years and that ultimately has made for a better life for the animals entrusted to our care. There are many people to thank specifically, and there is always the danger in a piece like this of inadvertently omitting someone whose contributions have helped to move *AKF* forward from a small mimeographed newsletter to the professional journal we see today. But at the risk of omission, I do want to thank a few folks. Thanks too *Ruptered Rhino* (*AKF's predecessor*) editors and supporters Ron Kaufman, Chris LaRue, Brad May, Dave Ruhter, Rick and Judy Steenberg, Vicki Norwood-Brown and Linda Weiss. Others who helped included the late Jane Kaufman, Linda Rounds, Sandy Horvat and Susan Love. The first *AKF* issue was a mere 3 1/2 pages - who knew where it might go? Thanks to Cecila Sauer and Lois Bogia, the first paid part-time editors in *AKF's* early days. And to those who have helped me in various capacities during my tenure as editor, a special thank you to Gretchen Ziegler, Kayla Grams, Ron Kaufman, Mike Coker, Connie Cloak, Alice Miser, Bernie Feldman, and Ron Ringer; to columnists Diana Guerrero, Georgann Johnston, Bill Baker, Bruce Elkins, Kevin Shelton, Dan Conklin, Jan Roletto, Dawn Neptune, and Rachel Cantrell, my thanks for your steadfastness and dependability each month. To all the talented keeper/artists whose wonderful depictions of animals and zoo keepers have graced the covers of the *Forum* over the years, a special thank you--you have helped to make *AKF* a unique publication within the zoo industry. A special thank you to the many Board of Director members under whom I have worked for your support of and belief in the journal. And to my best friend and co-worker Administrative Secretary Barbara Manspeaker, thanks for always being there. We are 30 years and counting--we hope to continually improve the quality of your journal. I hope you will plan to contribute and share with your colleagues through the pages of *Animal Keepers' Forum*. Knowledge shared makes us all more powerful and effective. Who knows what the next 30 years will bring?

Susan Chan, Managing Editor, AKF

Cleveland AAZK Chapter Offers Another Challenge

So you thought the "Cleveland Challenge" was over? Think again. We're back. We know... you can't get rid of us. We just enjoyed planning the 2003 AAZK Conference so much that we thought we would continue you on with the next phase. We have decided to institute the "Cleveland Challenge-Round 2."

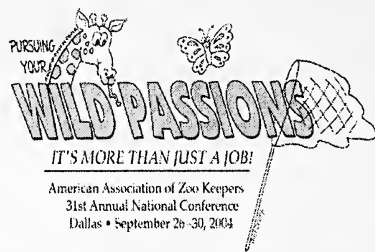
Since the "Cleveland Challenge" encouraged so many of you to donate to our conference, we want to now encourage you to donate to AAZK, Inc. So here's the rules: for any Chapter donating to AAZK, Inc. we will **match your donation** dollar for dollar up to \$5000 from now until **1 April, 2004**. AAZK, Inc. needs all of our support, and this way your dollars will be worth double. So when you are thinking of where to send your Christmas fundraising money, or you are thinking of adding a little extra in your recharter package, think of the "Cleveland Challenge-Round 2."

AAZK Administrative Office will send us a listing of Chapter donations after the 1 April deadline and we will match them up to \$5000. Let's keep AAZK, Inc. moving forward by supporting the Association's programs and projects.

Dallas Chapter to Continue Chapter Challenge “Tradition”

The Dallas Chapter of AAZK, hosts of your 2004 National Conference “*Pursuing Your Wild Passions*” announces the continuation of what we hope will become a new AAZK Conference tradition. In the spirit of support generated by the Cleveland Challenge, we are issuing the **Chapter Challenge 2004**.

What is it? In order to keep delegates’ cost to a minimum, while ensuring the best possible conference, we are encouraging Chapters to donate. If your Chapter contributes \$250.00 or more, they will be entered into a drawing. The winning AAZK Chapter will receive one full registration and one double occupancy room for five nights at the Adam’s Mark Hotel (Sept 26-30, 2004). Letters detailing all the information will be sent to all AAZK Chapters in January. Start planning now to meet the challenge!!!



Chapters Reminded About Recharter Packets

Recharter packets were sent out at the beginning of January to all AAZK Chapter Presidents. They must be returned to Administrative Offices **by 1 March 2004** to avoid paying the \$100.00 late fee. If you have questions about filling out the forms, contact Barbara Manspeaker at 1-800-242-4519 (US) or 1-800-468-1966 (Canada). You may also email Barbara at aazkoffice@zk.kscoxmail.com. Make certain when you return your packet that you have completely filled out the forms, have included your recharter fee check made out to “AAZK, Inc.”. Be sure to keep a copy for your chapter’s files. Return of these forms is part of the Association’s obligations to the Internal Revenue Service under our 501(c)(3) nonprofit tax-exempt status. Failure to have forms returned by all of AAZK’s chartered Chapters puts that tax-exempt status in jeopardy. Your full cooperation is greatly appreciated.

AAZK Announces Availability of Granting Programs

The American Association of Zoo Keepers announces the availability of two granting opportunities:

The Conservation, Preservation and Restoration (CPR) Grant – This \$1,000.00 grant is designed to encourage and support efforts in conservation conducted by keepers and aquarists in zoological parks and aquariums around the world. Members of AAZK, Inc. in good standing are eligible to apply and receive this grant. The member **MUST** have an active role in the conservation effort submitted for consideration. The division of this grant between two projects is at the discretion of the CPR committee. Funds are made available only after a progress report and receipts have been submitted.

The Zoo Keeper Grants in Research – Two \$1,000.00 grants are funded annually to encourage and support noninvasive research conducted by keepers in zoo and aquarium settings. The principal investigator **MUST** be a full-time keeper and a member of AAZK, Inc. in good standing.

Deadline for application submission for either grant option is 01 June 2004. Successful grant recipients will be announced at the AAZK National Conference in Fall 2004. The grant cycle runs from 01 January 2005 to 31 December 2005. For further information or an application, see the AAZK Website at www.aazk.org, or contact Jan Reed-Smith, AAZK Grants Committees’ Chair, jrsotter@iserv.net, 616-693-2680, Fax: 616-374-3263. Please specify which grant program you are interested in.

From the Bowling for Rhinos Chair

Please send your 2004 Bowling for Rhinos event date and contact information ASAP to: PattyPearthree, c/o BFR, 318 Montibello Dr., Cary, NC 27513. Chris Hartley from the Blue Rhino Gas Company will then contact local Blue Rhino companies in your area to get their support and participation in your event. Look for the BFR insert in this issue of *AKF*.

Thanks Go Out for Adopt-A-School Donations

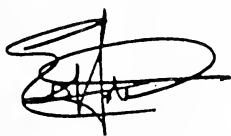
AAZK would like to thank the following members from Sioux Falls, SD for their recent donations to the Adopt-A-School Program: Laura J. Reese, Tuula E. Skidmore, Miriam Dailey, and Rhonda Wozniak. Such donations help support the school lunch program at the Lebarua Elementary School is just outside of Lewa Wildlife Conservancy in Kenya.

From the Executive Director.....

For the past two years, this Association has struggled with the same sluggish economy that you experience. We have attempted to balance the budget not on the backs of the member, but on that of the Chapters, which have the ability to raise funds as a working group. We have tried numerous membership incentives during the past two years. While we still retain members, we are not growing enough to continue to support our programs at the current level. Rather than cut membership services and future programs, we have raised the membership dues by \$5.00, for only the second time in fifteen years. Chapter dues will also increase this year. Both increases are effective January 1, 2004.

I am very pleased to announce that our endeavor to provide continuing education to our membership, a combined effort with AZA, Advances in Animal Keeping in Zoos and Aquariums, has been booked completely for April 2004. There is a waiting list for 2004 classes, and it is anticipated that even with a preference given to AAZK members, 2005 classes will fill up quickly when enrollment opens. Watch for the announcement in the *Animal Keepers' Forum*.

The 2003 Conference hosted by the Cleveland Chapter of AAZK was a tremendous success. Thanks to all the hard work by the Chapter, keepers, and volunteers of that fine facility. Through their hard work and in addition to the funds due the national body, the Chapter has made an additional donation to round out the final figure. The total amount of funds forwarded to the Association is \$15,000.00. This really helps the Association in this difficult time. In addition to their generous donation, the members of the Cleveland Chapter have kept alive the "Cleveland Challenge" and have offered to match any and all Chapter donations to the Association, up to a total of \$5000.00. Thanks to Cleveland and all the Chapters that keep this Association on the right track.



Ed Hansen
Executive Director, AAZK, Inc.
Tucson, AZ

Coming Events

II International Tapir Symposium - 10-16 January 2004 - in Panama City, Republic of Panama. Will bring together a multi-faceted group of tapir experts, including field biologists, educators, captivity specialists, adamecians, researchers, veterinarians, governmental authorities, politicians and other interested parties. Session topics will cover field research, population management, husbandry, fundraising, marketing, governmental regulations, eco-tourism, education, veterinary issues and tapir bio-politics. Visit the Symposium website at <http://www.caligo.com/tapir/> for more information and registration details.

Karen Pryor Clicker Expos 2004

23-25 January 2004, Berkeley, CA; and 26-28 March 2004, West Chester, PA. Each Clicker Expo will feature 15 main stage presentations and 18 workshops over three days. Topics will cover the latest operant conditioning techniques utilized for domestic as well as zoo and aquarium animals. For a full schedule and registration information, visit www.clickertraining.com

International Polar Bear Husbandry Conference

4-7 February 2004 in San Diego, CA. Polar Bear International (PBI) in association with the AZA's Bear TAG are cohosting this conference to be held at the Bahia Hotel on Mission Bay. They are bringing together many of the most experienced and knowledgeable "bear" professionals in the world, including noted scientists, zookeepers, and naturalists representing a broad spectrum of institutions. Information and online registration is now available on PBI's website (<http://www.polarbearsinternational.org>). This includes the invited speaker list (updated monthly) as well as the conference agenda, goals, scholarship information and other specifics. Any questions, please do not hesitate to call our headquarters at (225) 923-3114.

International Association of Avian Trainers and Educators (IAATE)

- 18-21 February, 2004 in Toronto, Canada. Hosted by the Toronto Zoo. For more information call (416) 392-6008 or email kbuckle@sympatico.ca, hamiltonk2000@rogers.com

AZA Western Regional Conference - 17-20 March 2004. Hosted by Santa Barbara Zoo. For information contact Nancy McToldridge at (805) 962-5339.

The Felid TAG Annual Conference Meeting

- 26-28 March, 2004 in Albuquerque, NM. Due to a scheduling conflict the Felid TAG meeting has been rescheduled to these dates. Hosted by the Rio Grande Zoo. The SSP meeting will take place 24-25 March. For more information please contact Lynn Tupa at (505) 764-6216. ltupa@cabq.gov;

or Gwen Dragoo at ((505) 764-6262, gdragoo@cabq.gov<

AZA Traveling Training - 24-30 April 2004. To include Keeper Training Course. At the Houston Zoo, Houston, TX. Contact Alexis Weider, Training Administrator at (301) 562-0777, Ext. 256.

AZA Eastern Regional Conference - 12-15 May 2004. Hosted by Louisville Zoo. For information contact Sandra Allen (502) 238-5608.

IX International Otter Colloquium - 4-10 June, 2004 at Frostburg State University, Frostburg, MD. Theme is "Otters: Ambassadors for Aquatic Conservation". For more information go to <http://otter.frostburg.edu><

2004 Gorilla Workshop - 25-28 June, 2004 in Calgary, Alberta, Canada. Hosted by the Calgary Zoo. Look for more details and registration information as they become available at <http://2004gorillaworkshop.tripod.com><

AAV 25th Annual Conference & Expo - 16-20 August 2004 - in New Orleans, LA at the Sheraton New Orleans Hotel. For further information call (303)756-8380 or visit www.conferenceoffice.com/aav<

Joint Conference of the American Assoc. of Zoo Veterinarians, the Wildlife Disease Assoc. and American Assoc. of Wildlife Veterinarians

- 27 August-3 Sept., 2004 in San Diego, CA. Program sessions include joint plenary sessions and an AAZV session. There will also be a poster session, veterinary and graduate student paper competitions, and workshops/wet labs. For information regarding presentation of papers, visit their website at www.aazv.org or contact Joe Flanagan, DVM, Houston Zoo at phone (713) 284-1300/- or email - jflanagan@houstonzoo.org< For additional conference info, contact Wilbur Amand, VMD, Executive Director/AAZV at (610) 892-4812 or email - AAZV@aol.com<

25th Annual Elephant Managers Association Conference

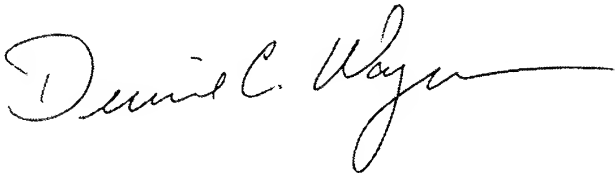
- 14-17 October, 2004 in Tulsa, OK. Hosted by Tulsa Zoo and Living Museum. Pre- and post-trips scheduled to Dickerson Park Zoo and Riddle's Elephant and Wildlife Sanctuary (18 Oct.). For more info email: karendunn@ci.tulsa.ok.us or visit www.elephant-managers.com and/or www.tulsazoo.org<

Post Your Coming Event Here - email to akfeditor@zk.kscoxmail.com

From the President.....

The American Association of Zoo Keepers, Inc. has a new logo! Take a look at the front cover of the *Forum*. This artwork represents the new logo for the Association. Several artists were solicited to produce logos for consideration in 2003. All submitted great designs, but in the end the Board chose the artwork you now see. So what was wrong with the old logo you ask? Nothing and it will not totally go away, you will see it crop up from time to time. So then why have a new logo? There are several reasons. AAZK would like to start a line of merchandise to help bring money into the Association to help fund the various publications, etc. that we produce and the projects we fund. Try as we might we simply could not reproduce the old logo in a cost-effective way that also looked great. This new logo has a simpler, cleaner look that will be easier to reproduce on a variety of different mediums.

Beyond the merchandising aspects of a new logo keep in mind the type of work we do. It's constantly changing and is never static. Along those same lines this Association has and is changing. The Board felt it time to move forward as well. A new logo is one aspect to change. If you look closely you'll notice the rhino is on the move in the design. The artist, Amy Burgess of Disney's Animal Kingdom, purposely designed the rhino to be running. Her concept of this Association, and one that I agree with as well, is that it is moving forward and is not static. We are constantly changing and adapting the techniques we use to manage our animals. In the same way this Association needs to change and adapt to meet the needs of its members. The change in logo will help us do that by opening up avenues previously closed as well as giving us a fresh new look. Two thousand and four will find the Association moving forward, don't be left behind! Take care and be safe.

A handwritten signature in black ink, reading "Denise C. Wagner". The signature is fluid and cursive, with a long horizontal line extending from the end of the name.

Denise C. Wagner, AAZK President
The San Diego Zoo's Wild Animal Park
Escondido, CA

AAZK Award Nominations Are Now Being Accepted for 2004

The AAZK Awards Committee is accepting nominations for the **Jean M. Hromadka Excellence in Zookeeping Award (EZ)**, **The Certificate of Merit for Zoo Keeper Education (CMZE)**, and **The Certificate of Excellence in Exhibit Renovation (CEER)** to be presented at the 2004 AAZK Conference in Dallas, TX. The deadline for all award nominations is **1 June 2004**. Information concerning the qualifications, nomination procedure, selection procedure and an explanation of the awards may be obtained by contacting Janet McCoy, Chair, AAZK Awards Committee, Oregon Zoo, 4001 S.W. Canyon Rd., Portland, OR 97221.

Jean M. Hromadka AAZK Excellence in Zookeeping (EZ) Award

The American Association of Zoo Keepers, Inc. (AAZK) is the administering organization of the Jean M. Hromadka Excellence in Zookeeping Award presented by the AAZK Awards Committee. The purpose of the award is to recognize achievement and determination of an individual in the zookeeping field and in fostering professionalism. Zookeeping is a science combining zoology, biology, animal management, behavioral observation and daily record keeping on the collection of species in their care. This is essential knowledge for maintaining a species effectively in captivity. The excellent zookeeper must excel in one or more of these areas, but not be lacking in any of them.

The Excellence in Zookeeping Award was founded by John Siegel, 1974-1975 CHAIR, in 1974. The original name of the award was the Marlin Perkins Award, named after the famed zoologist who started his career as a zookeeper. The name was changed in 1978 to the EZ award. In 1990, the name was changed to the Jean M. Hromadka Excellence in Zookeeping Award in memory of her outstanding contributions to the furtherance of AAZK through committee work and as President. The award is presented at the annual AAZK National Conference.

Qualifications:

1. The nominee **must** be a full-time animal keeper, employed in any North American zoological institution, aquarium or related facility for at least five years.
2. The nominee **must** have been employed at least two years on permanent status at the same zoo, aquarium or related facility.
3. The nominee **must** be nominated by his or her peers who have also been employed at that same zoo, aquarium or related facility. Supporting nominations may be submitted by management personnel from the same institution.

Nomination Procedure:

1. List name, position, institution's name, address, phone and Director, years of service in the field and the recommendation of peers or colleagues.
2. List and **document** commitment to the profession, outstanding achievements, practical/outstanding application of knowledge and experience, and keeper skills, etc.

Verification of these facts must be signed by the zoo director, curator, or immediate supervisor of the individual being nominated.

3. List any extra activities outside of zoo, aquarium or related facility work: working with conservation groups, youth, wildlife officials, etc.
4. Deadline for nominations is **JUNE 1st** of each year.

Selection Procedure:

The Awards Committee, consisting of five keepers, will independently review each nominee.

Certificate of Merit for Zookeeper Education (CMZE)

The American Association of Zoo Keepers, Inc. (AAZK) is the administering organization of the Certificate of Merit for Zookeeper Education (CMZE) presented by the AAZK Awards Committee. The purpose of the award is to recognize individuals, institutions and organizations in the zoological community most actively promoting educational programs for zookeepers. Examples of such support are: reimbursements for formal education, keeper training courses and staff seminars.

The CMZE was founded by Jeff Roberts, 1976-1978 CHAIR, in 1978, to compliment the work of the AAZK Education Committee that had been formed at that time. The award is presented at the annual AAZK National Conference.

Qualifications:

1. Any staff individual, institution or organization from a North American zoo, aquarium or related facility is eligible.
2. The keeper training program must have been in existence for at least one year.

Nomination Procedure:

1. If you feel that your institution, organization or a staff individual merits such an award, please submit a letter of nomination which mentions specifically the educational programs that are offered.
2. Claims made should be backed up with documentation for the committee to review.
3. List the institution or organization's name, address, phone and Director.
4. The deadline for nominations is JUNE 1st of each year.

Selection Procedure: The Awards Committee, consisting of five keepers, will independently review each nominee.

Certificate of Excellence in Exhibit Design Renovation (CEER)

The American Association of Zoo Keepers, Inc. (AAZK) is the administering organization of the Certificate of Excellence in Exhibit Renovation (CEER) presented by the AAZK Awards Committee. The purpose of the award is to recognize institutions or organizations in the zoological community for the design and renovation of existing animal facilities which involved active keeper participation in the process.

The CEER was established by Janet McCoy, 1990 CHAIR. Bill Whittaker proposed the award to the AAZK Board of Directors. The award is presented at the annual AAZK National Conference.

Qualifications:

1. Any North American zoological institution or organization is eligible.
2. The renovated exhibit must be in full operation for at least two years.
3. The exhibit must be nominated by a keeper at that same institution or organization. Supporting nominations may be submitted by management personnel from the same institution.

Nomination Procedure:

1. List institution or organization's name, address, phone and Director.
2. **Document** local awards or commendations for exhibit, drawings, 8 X 10 color photos - no slides (2 before and 8 after), and renovated exhibit type: single or multispecies, and size.
3. **Document** keeper participation in the design and why the existing facility was renovated.
4. **Document** interface with other zoo divisions; and maintenance of exhibit after completion.
5. The deadline for nominations is **JUNE 1st** of each year.

NOTE: Materials will not be returned.

Selection Procedure: The Awards Committee, consisting of five keepers, will independently review each nominee.

Nominee Evaluation:

The evaluation of each nomination is broken down into four categories based on the general guidelines outlined for the award. The four categories are: Keeper Involvement, Exhibit Functionality, Exhibit Management and Visitor Point of View/ Other Information. Items the committee is looking for are the following:

A. KEEPER INVOLVEMENT:

- a) degree of keeper involvement with conceptual development of exhibit
- b) degree of keeper involvement with facilitation of completion of exhibit, (fund raising, promotion, assist with construction)
- c) contribution to educational experience (graphics, conservation message)
- d) originality - is it something new and different, or has it been tried before

B. EXHIBIT FUNCTIONALITY:

- a) versatility - indoor/outdoor, four seasons, protection from elements
- b) accommodates and encourages animal's natural behavior - climbing structures, land area, height, water
- c) hard (gunite, concrete) vs soft (grass, dirt) environments - as to animal needs
- d) sight lines valuable to animal as well as visitor - important to some animals (polar bear, chimps)
- e) physical and visual barriers for animal's use, animal safety
- f) flexible entrance/exits (hoofstock - more than one entrance)
- g) ability to exhibit natural social grouping
- h) breeding success

C. EXHIBIT MANAGEMENT:

- a) how management of exhibit interfaces with other zoo divisions (grounds, maintenance - simple repair, paint)
- b) keeper serviceability, overall maintenance of exhibit and surroundings
- c) adequate drains and properly located
- d) quality and versatility of holding areas - ease of separating animals, moving, breeding, sick

- e) keeper sight lines - can you see animal when they come into holding or when shifting them between areas, keeper safety
- f) ease of providing time change items (browse, logs, feed, novel objects)
- g) environmental control (ease of seasonal adjustments - ventilation, heat)

D. VISITOR POINT OF VIEW/OTHER INFORMATION:

- a) educational experience (conservation message)
- b) immediate and sustained viewer interest
- c) sight lines - not see doors, drains, fencing - does it have esthetics
- d) bonus point - local awards, commendation, "wow" factor
- e) include anything else pertinent to the renovated exhibit that you think is important

The character of the awards includes either a plaque or certificate, letter of notification to the institution's director and national recognition by professional journals. Such journals include: the American Zoo and Aquarium Association (AZA) and the Canadian Association of Zoological Parks and Aquarium (CAZA) Newsletters, Animal Keepers' Forum (AAZK), Awards, Honors and Prizes: Volume 1; United States and Canada. The latter is published by Gale Research Company based in Wheaton, MD and found in medium to large sized libraries across the U.S. and Canada.

Award Nominations should be submitted to:

Janet McCoy, Awards Chair

The Oregon Zoo, 4001 SW Canyon Road, Portland, OR 97221

Next month we will include information on making nominations for the Lifetime Achievement Award, the Meritorious Achievement Award, and the Environmental Enrichment (EE) Award

Deadline for Nominations is 1 June 2004

MOVING?

Please let us know when you change your address! It now costs AAZK 99 cents every time an *AKF* is returned because of an incorrect address. Call 1-800-242-4519 (U.S.) or 1-800-468-1966 (Canada). If you should get the answering machine, please speak slowly and clearly when giving an address change. Or you may e-mail address changes to: aazkoffice@zk.kscoxmail.com

THANKS !

AAZK Announces New Members

New Professional Members

Brandi Moores, **Zoo New England (MA)**; Katrina Smith, **New York State Living Museum at Thompson Park (NY)**; Sara Pilon, **Rosamond Gifford Zoo at Burnet Park (NY)**; Robin Golden, **Philadelphia Zoo (PA)**; Katherine Duello, **Zoo Atlanta (GA)**; Jamie Jakubiak, **Birmingham Zoo (AL)**; Caroline von Brecht, Jennifer Jolley and Naama Yael, **Nashville Zoo (TN)**; Michelene O'Connor, **Milwaukee County Zoological Gardens (WI)**; Sara Wunder, **Kansas City Zoo (MO)**; Jessica Toles and Roberta Rose, **Sedgwick County Zoo (KS)**; Melanie Secret, **Audubon Zoo (LA)**; Ashley Smith, **Little Rock Zoo (AR)**; Kristin Steelbel and Dennis Rickel, **Dallas Zoo (TX)**; Laura Kelly, **M.D. Anderson Cancer Center (TX)**; Marcia Deleon, **no zoo listed (Edgewood, MN)**; Claudette M. Sandoval, **no zoo listed (Albuquerque, NM)**; Candice J. Weber, **The Living Desert Zoo (CA)**; Samantha Moorehead, **Santa Barbara Zoological Gardens (CA)**; David Sorensen, **no zoo listed (Herald, CA)**.

New Contributing Members

Patrice Pace
Walt Disney Animal Kingdom
Lake Buena Vista, FL

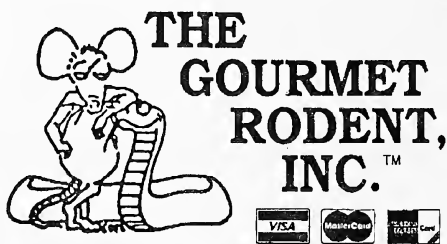
Renewing Contributing Members

Bruce M. Thomas
Cambridge, MD

Lane Theriac, Director
Washington Park Zoo
Michigan City, IN

Great Apes Face Bleak Future Ebola Virus Latest Threat

The U.N. is convening an "emergency meeting" aimed at drafting a strategy to "rescue the great apes, man's closest living relatives, from imminent extinction" reports the *Financial Times* 11/4. According to UNEP "the clock is standing at one minute to midnight for the great apes" and estimates indicate that African gorillas are losing 2.1% of their remaining habitat each year and orangutans 5% and the three sub-species of mountain gorillas "face a very high risk of extinction in the wild in the immediate future." Conservationists maintain that the apes survival has "great symbolic importance for mankind's ability to develop a more sustainable future." Amid "clear evidence" that the deadly Ebola virus has "swept through core populations of gorillas and chimpanzees in Africa," conservationists from GRASP, the U.N.'s Great Ape Survival Project, are meeting to formulate an "emergency strategy" to stave off the extinction in the wild of human's closest relatives says MSNBC 11/25. On top of logging, human encroachment, loss of habitat, capture for medical research and the bush meat trade, the ebola epidemic could be the *coup de grace* for the great apes. Sources: *GREENlines Issue #1989 11-12-03 and Issue #200 12-01-03*



RATS AND MICE

Bill & Marcia Brant

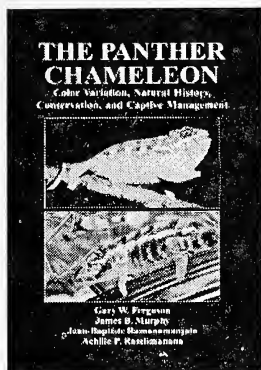
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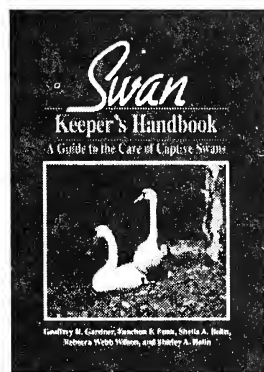
e-mail: GrmtRodent@aol.com

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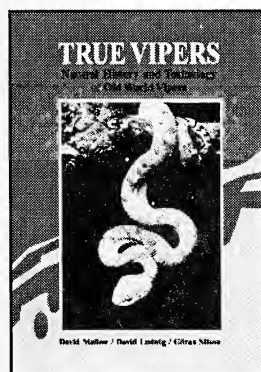
THE PANTHER CHAMELEON: Color Variation, Natural History, Conservation, and Captive Management

by Gary W. Ferguson & James B. Murphy, et al
Orig. Ed. 2004, 168 pp., ISBN 1-57524-194-3, \$35.50



SWAN KEEPER'S HANDBOOK: A Guide to the Care of Captive Swans

by Geoffrey R. Gardner, et al
Orig. Ed. 2003, 152 pp., ISBN 1-57524-199-4, \$44.50

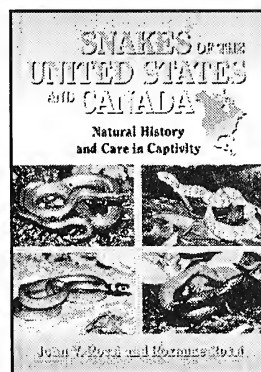


TRUE VIPERS: Natural History and Toxinology of Old World Vipers

by David Mallow, David Ludwig & Göran Nilson
Orig. Ed. 2003, 410 pp., ISBN 0-89464-877-2, \$79.50

SNAKES OF THE UNITED STATES AND CANADA: Natural History and Care in Captive

by John V. Rossi & Roxanne Rossi
Orig. Ed. 2003, 579 pp., ISBN 1-57524-031-9, \$145.00



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International Congress on Zookeeping



Global Networks – Animal Welfare – Husbandry – Conservation – Professionalism - Knowledge

Ideas Without Borders

*By Jeannette Beranger, Chair/Coordinator
AAZK International Outreach Committee
Roger Williams Park Zoo, Providence, RI*

October of 2003 will always be in my mind one of the most satisfying professional experiences of my life. I think I can speak for everyone who attended the First International Congress on Zookeeping (ICZ) that none of us had ever witnessed the level of enthusiasm, dedication, and professional interaction between people as we all experienced in Holland this past October. Over 270 delegates representing 27 countries attended the conference bringing together a diverse group of people with a unified agenda on their minds: To constantly strive at becoming better keepers, to look for ways to improve the lives of the animals we care for, and to help create a brighter future for the natural world we are all fighting to save.

For the past three years I had the privilege and honor to help organize the International Congress on Zookeeping that was held at the bird park Avifauna located just south of Amsterdam. I worked as part of a core group of individuals who represented the seven professional zookeeper associations around the globe. Our group consisted of two representatives from each of the associations which include the American Association of Zoo Keepers, Inc. (AAZK), The Association of British Wild Animal Keepers (ABWAK), The Australian Society of Zookeepers (ASZK), Fondation de Harpij (Dutch Keepers Association), Berufsverband de Zootierpflieger (BDZ, German Keepers Association), Association Francophone Soigneurs Animaliers (AFSA, French Zookeeper Association), and Asociacion Iberica di Cuidadores de Animales Salvajes (IACAS, Spanish Keepers Association). Shane Good of the Cleveland Metroparks Zoo and I represented the AAZK on the committee.

We initially formulated the plan to create an international conference when most of this core group first met at the AAZK National Conference in Columbus, Ohio in 2000. After receiving approval from our respective associations, we formed an e-group and did much of the planning via the Internet. It was apparent after several months that there are some things that could not be decided upon through e-mail, so the group met in 2001 at the Roger Williams Park Zoo in Providence, RI. This meeting turned out to be much more difficult than we ever thought possible since it had been planned for the end of that September, and was scheduled to be just two weeks after the terrorist attacks on New York and Washington. I cannot say enough about the determination of the core group and its commitment to the ICZ. When questions arose from each of their families regarding the safety of flying at that time, each of these people told their loved ones that the ICZ was too important to give up on and that we would move forward no matter what obstacles we encountered. Everyone made it to Rhode Island and it was never doubted that we would move on. The group met again in 2001 in Holland to inspect the conference facilities and tie up loose ends with conference planning. The group was now set to count down the days to October 2003!

It's funny how a year can come and go so quickly. We arrived at Avifauna this past October feeling as if we had just been in Holland the day before. Delegates began arriving before the pre-conference trip to the Noorder Dierenpark, a zoo in Emmen. Everyone arrived with smiles on their faces despite many of them being in a state of near exhaustion from jet lag and/or long travel time. Quite a few traveled for several days to get to the conference. One delegate, who was scheduled to speak, was so determined to attend the ICZ that he showed up despite being confined to a wheelchair with two broken legs and a crushed pelvis. His talk was on African wild dogs and his injuries were a result of a plane crash that occurred during his research work with wild dogs eight weeks prior to the ICZ!

The ICZ opened with a spectacular icebreaker full of games created to get everyone introduced to each other. The mingling had begun. We had our ICZ delegates that night and additionally had many other Dutch keepers who were attending their annual meeting of Fundation de Harpij at the same facility that day. It was a memorable night that opened the doors for the networking and discussions to begin. It was amazing how such a diverse group could be so interconnected. One incident that will forever stay with me is when I spoke to Haruo Otsu from the Hiroshima Zoo in Japan. His English skills were not great and he seemed to be a bit frustrated in trying to find someone who "had his rhino". I managed to find out who he was looking for and it just so happens that I was speaking to the very person he was looking for just minutes earlier. I asked Haruo to wait at our table until I found the keeper he was looking for - Rebecca Mulder from the Metro Miami Zoo in Florida. I found her and asked her if Miami had a rhino from Japan. She told me yes they did, and in fact it just so happens at that moment she was talking to another keeper from Miami who actually worked with the animal. I brought an elated Haruo to speak with Rebecca. He asked her if she knew "his rhino". She replied "Yeah, I know 'Toshi'. He's doing great." I don't believe I have ever seen someone smile so wide as Haruo did at that moment while exclaiming "Oooh Toshi!!!!". It turned out that he was the rhino keeper at his zoo in the 70's. The birth was so special that Haruo had to leave in the middle of a wedding ceremony to be present for 'Toshi's' birth back then. Haruo has since become the species coordinator for black rhinos in Japan and he never forgot his special rhino. 'Toshi' has a happy ending to his story as well and has turned out to be very a reproductively successful male here in the US. The zoo world became much smaller for all of us in Holland that week.

The conference program had a wide range of topics that stretched from bush fires and zoo crisis management in Australia to gorilla regurgitation in Ireland to a "Dream Night" held in zoos for chronically ill or disabled children to wild dog conservation in Africa. There was something for everyone to learn from.

One evening of note during the conference was held at the Burgers Zoo. The zoo is known for its huge chimpanzee colony and the three massive enclosed structures that re-create a rainforest, a Sonora desert habitat, and the multiple layers of a tropical ocean. We all enjoyed the opportunity to see the inner workings of these complex but efficient biological systems. Everyone was treated to an evening within the tropical forest and desert structures. We dined with vultures flying overhead during the entrée and at dinner we watched the manatees and capybara swimming below the tallest waterfall in Holland.

We had a successful closing to the conference with a banquet and silent auction. The auction was an entirely new idea to most of the delegates and it became one of our biggest challenges with the language barrier.

When the end of the conference finally came to pass, many left friendships that they hoped would last for a long time to come. All left Avifauna recharged and inspired. We hope that within the next year this inspiration will translate to form cooperative projects between many of the countries represented and the development of two new zookeeper associations - one for Scandinavian zookeepers, and one for the Japanese zookeepers.

Some delegates were fortunate enough to squeeze on to the post-conference trip. It was plain to see that the key to the success of the Dutch zoos is that each one is different. We visited Rotterdam Zoo with its vast Oceanarium and state-of-the-art elephant facility. Few of us have seen so many baby elephants in one place outside of the wild. We spent that night in the bungalow park of Safari Beekse Bergen and woke up the following morning to the various animals sounds of this delightful safari park. Beekse Bergen is particularly known for the vast expanse of exhibit space and the interesting mix of species such as a herd of elephants in with large troops of baboons. Some of our Australian delegates were thrilled during their visit at this zoo to meet the offspring of one of the hyenas they worked with back in Australia. Later that day we visited the Ouwehands Zoo known for its five-hectare walk-through bear exhibit (the visitors are in the cage, not the bears) and its marvelous indoor educational activity facility for children. The bear exhibit included many animals that were confiscated “dancing bears” from throughout Europe.

The Wissel Zoo was the first stop on the last day of our tour. While walking through this zoo you had the sense you had entered a grand estate full of lush animal displays filled with birds and small mammals. They specialize in tamarins and marmosets.

The final stop on our trip was Apenheul. This facility has many walk-through primate exhibits as well as large gorilla and orangutan areas most of us only dream about. This facility represents all the good things we can hope to offer our animals if we had the space and funding. It was particularly moving for our Spanish delegates to have the opportunity to visit with an orangutan that originally came from the Barcelona Zoo. Even after the many years that had passed since they had seen each other, the animal clearly recognized the woman, Helena, who used to do enrichment with him in Barcelona. The animal followed her throughout the facility and kept her in view even as we made our way out of the orangutan area.

The post-conference trip finally came to an end after three days. After seeing such diversity and ingenuity, we all were full of new ideas to bring home and utilize in our own institutions. Beyond that, the goodbyes could be delayed no longer and that extra period together as a group didn't make it any easier to utter the farewells when the time came to say them. For most it was time to go home. For the ICZ organizers, we had one more task ahead of us...the wrap up.

As a committee, the core group for the ICZ met for the weekend at Safari Beekse Bergen to wrap up details on the ICZ. We decided to move forward and try to pursue a second ICZ, this time in Australia in 2006. We revisited all of the details for the formation and function of the ICZ to find ways to improve techniques for use in the next conference. We also wanted to begin plans to solidify the future of the ICZ as an organization itself so that it may function as a sort of “United Nations” for zookeepers.

That weekend was to be the last time the core group would meet as a team. Several of the members of the group will be moving on as their roles change within their respective associations. New members will step in to take their place once they have been appointed. That weekend was a bittersweet parting of our “ICZ family”. The members of the group touched each others' lives through triumph and tragedy. We helped each other through hoof & mouth disease and tragic floods in Europe, fires and devastation in Australia, massive oil spills in Spain, and terrorist attacks in the US. The bond with each other breached all borders and there wasn't a day that passed where we weren't all certain that we could call upon each other at any time or any place for help. We are not certain where the future will lead the members of our group but one thing is certain...the ICZ will go on as our friendships will. Zookeepers are a special breed apart from other professionals in that the bonds that join us go beyond “the job”. We all strive to make a positive difference for our animals and together we will make a difference.



ICZ delegates at Avifuana

I would like to acknowledge the members of the core committee for their time and dedication to make the ICZ possible:

Helena Marquess, AICAS

Pep Ribas Xarles, AICAS

Mickael Michault, AFSA

Geoff Underwood, ASZK

Carla Srb, ASZK

Hanny Verberkmoes, HARPIJ

Ben Westeveld, HARPIJ

Carsten Knott, BdZ

Anthony Kershaw, BdZ

Shane Good, AAZK

Andrew Bagnall, ABWAK

Darren McGarry, ABWAK

Why it's Worth Asking.....

By

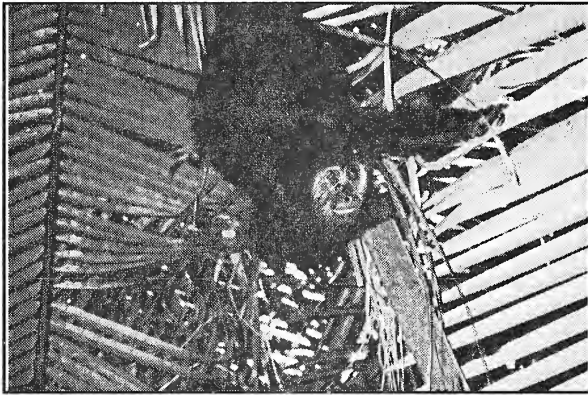
Carrie Kasnicka, Senior Keeper
Indianapolis Zoo, Indianapolis, IN

Leafing through the back of the *Forum* one afternoon, I came across a request for volunteers to assist in Belize. You may have read the same one. The position was to assist with researching and caring for confiscated and released wildlife. It forewarned of long days, hot, buggy days of hard work in the Belizean neo-tropical forest and it got me thinking...

Have you ever dreamed of traveling to another country? Have you ever pictured yourself doing research on rare, exotic animals in a rainforest? How many times have you been sitting on your couch, watching the Discovery Channel and wishing you could do that, even just once? I wished that too, but did something about it...

The next thing I know I am trekking through the Belizean forest trying to keep up with Robin Brockett, the amazing woman (and quick hiker!) who does for a living what many of us keepers too often wish we could do. The first few days I was consumed by the awesome, unfamiliar interior landscape as I walked miles down rough, dirt roads, coming across my first of several wild tarantulas, waking up with scorpions near by, wearing clothes soaked through with sweat due to heat and

humidity even early in the day. She knows the immense forest like the back of her hand, since spending the last nine years there studying how to rehabilitate black howler monkeys and successfully release them into the wild. But Belize is packed with so much amazing wildlife and she often recognizes the sounds of bird calls, the rustle of a tapir dodging for cover, or the smell of fresh ocelot urine.



One of five black howlers from Troop 2002. We observed them feeding, traveling or resting several times within the two-week period. Time of day, weather conditions and seasonal factors (and luck) may influence the probability of observing them.

showing through large leaves. The first of several treks to the forest I found myself in awe that I was actually doing this! Especially when we found Troop 2002, five fairly young black howler monkeys released from that year, feeding on leaves, brachiating through a humongous network of branches, and hearing their remarkable howling- all appropriate behaviors to potentially indicate they are indeed acting like wild monkeys. At similar times each day they would settle down in the trees and all rest, with their long, impressive limbs just dangling limply. Occasionally you see one of them mindlessly scratch at a pesky mosquito. Lucky for them (and unlucky for us), most of the bugs seem to be closer to us on the ground and fond of any exposed flesh. I soon realized the neo-tropical forest is a jewel for wildlife, as we came across black bellied turtles crawling along the forest floor (at times a popular dish for some), coatimundi, bats, snakes, and insects I had never seen before.

Typically I focused intensely at the ground while traveling behind Robin, trying my best to avoid tripping over the endless lattice of vines, slipping on leaves or running through a nest of fire ants, but I will never forget the first time I looked up as she pointed out the shadows of primates, their silhouettes



On a free day, the author traveled by bus to visit the Mayan ruins of El Castillo in the city of Xunantunich.

And that was only the first week. The second week contained just as much adventure as I visited other cities, the Belize Zoo, and canoed the Sibun River where I observed river otters, more iguanas basking in trees and falcons. I used a machete to chop trails and clear areas by the pre-release enclosures and cared for several parrots, soon to be released as well. I found it amazing to hear the birds at feeding times calling back and forth to their wild counterparts flying nearby. Most mornings I came across fresh, muddy, tapir tracks (the national animal of Belize) and in the afternoons I often observed vultures flying low against the strikingly blue sky. Most days were hot, buggy and full of hard, laborious work and were followed by quick, cold showers and early bed times under a mosquito netted canopy. Certainly not as comfy as the couch, but this is precisely what made this experience so incredible.

The nuts and bolts of it is that you have to ask. Ask someone at your institution if you can do this. Give them the chance to say yes. Airfare and about \$500 covers all expenses for two weeks. Be creative and exhaust your possibilities- the Indianapolis Zoo has the Kevin Gregory Field Experience Fund, the AAZK has the sponsorship

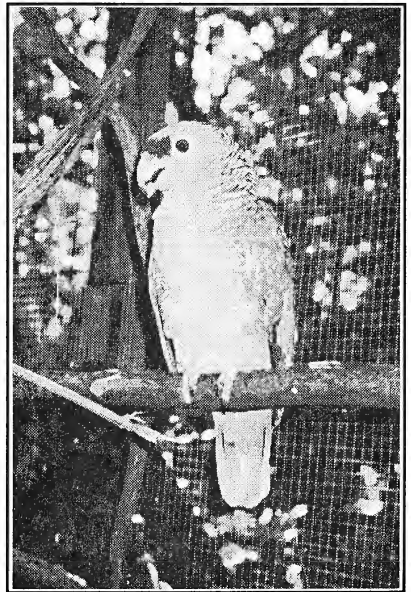
fund or possibly utilize conference budget. Stop sitting on your couch and watching someone else do this. Remind yourself why you have the coolest job in the world that allows you to care for animals, within the zoo, and affect them in the wild. Robin, with her 10 years of keeping experience in the US and nine years into this project, and the Wildlife Care Center provide you with an unbelievable opportunity for valuable field research. Be a part of it. Give someone the chance to say yes, I did and they sent me to Belize.

Interested in volunteering or giving a donation (even a few bucks goes along way), contact:

Robin Brockett
www.wildlifecarecenter@yahoo.com

If you have any questions about the keeper experience, contact:

Carrie Kasnicka
 Indianapolis Zoo
ckasnicka@indy zoo.com



During the second week, the author cared for pre-release native wildlife, including this Red Lored Parrot.



Book Review

Sea Turtles of the World

Text and Photography by Doug Perrine, 2003
Voyageur Press, 123 North Second Street, P.O. Box 338,
Stillwater, MN 55082
144 pgs, 100 color photos, Hardcover, \$29.95
ISBN# 0-89658-555-7

*Review by Kristen Schmid,
Senior Animal Keeper
Newark Museum Mini Zoo
Newark, NJ*

When I was asked recently to help identify sea turtle shells from the Newark Museum's 100+ years old natural science collection, I had little to offer except the wish that I knew more about this intriguing reptile. *Sea Turtles of the World* by Doug Perrine coincidentally fulfilled this wish.

This author holds a Master's in Marine Biology and has researched dolphins, manatees and sharks. While writing this review, I even caught his appearance on the Discovery Channel's Shark Week.

Perrine's 100 gorgeous color photographs are a culmination of 20 years of marine life experience. They are astonishing and beautiful, capturing many species of sea turtles hatching, swimming, resting, being groomed by other fish, reproducing, feeding, nesting and even sleeping.

Chapters One and Two explain the fossil record, evolution and anatomy of sea turtles. I was surprised to learn that the largest organ in a sea turtle's skull is the salt gland, not its brain! This is the same animal that manages to navigate 12,000 miles across the ocean and return to exactly the same beach from which it hatched up to 50 years before. The remaining chapters cover "Mating Behavior and Reproduction", and their life stages are described in "The Lost Decade", "Growing Up" and "The Incredible Journey". "Troubled Times" describes the environmental dangers sea turtles face, such as debilitating Fibropapilloma tumors caused by polluted wastewater entering the ocean. "Families and Species" describes in detail the facts specific to the Green Sea Turtle, the Loggerhead, the Hawksbill, the Olive Ridley, the Kemp's Ridley, the Australian Flatback and the Leatherback. Finally, "Watching Sea Turtles" describes how best to observe sea turtles respectfully both on land and in the ocean.

Doug Perrine's obvious message is conservation and is a strong one at that. He does suggest more than once that the ultimate solution to sea turtle preservation is human population control, acknowledging that this "dramatic change will not come easily". Realistically, should human population control ever be practiced or even enforced, the preservation of sea turtles will be one of many beneficial effects, but unfortunately not the driving cause.

Though not a book that can be used directly by keepers of sea turtles, it does contain a wide range of information to suit every taste and is readable from cover-to-cover. Doug Perrine has created a resource for the casual animal lover, the serious conservationist, the nature photographer, the hobbyist snorkeler and the zoologist. A great deal of technical scientific information has been sandwiched between the photographs, thereby balancing both science and the art of photography. His non-threatening presentation of the scientific information even includes a glossary that defines everything from *aquatic* to *mitochondrial DNA*, making this book digestible even to those lacking a science background. In a zoo setting, I can see this book becoming a popular gift-shop item.

A Kansas Snake Community: Composition and Changes Over 50 Years

By Henry S. Fitch

Copyright 1999, ISBN#0-8964-996-5

Krieger Publishing, P.O. Box 9542,

Melbourne, FL 32902-9542

Hardcover, 178 pgs.

List Price \$46.50

Review by Jeremy Konwiser

Animal Trainer/Presenter

The Living Desert, Palm Desert, CA

A Kansas Snake Community is a comprehensive review of the longest running, single site ecological research study of invertebrates ever done. It follows 50 consecutive years of studying 18 species of snakes found on the University of Kansas Natural History Reservation in northeastern Kansas. The study of 16 Colubridae and two Viperidae include the timber rattlesnake, black rat snake, and red milk snake among others. Snakes were live trapped, identified, marked, and information on weight, sex, reproductive condition, parasite load, and for food in the stomach was recorded before being released. Over the 50-year span of fieldwork (1948-1997) a total of 32,160 capture records of the 18 species were accumulated. Recaptures of individually marked snakes yielded essential information concerning growth, day-to-day and seasonal movements, longevity, and population density.

Following the book's introduction, the results are presented in a species-by-species account with information on morphological and ecological traits, behavior, food habits, reproduction, growth, sex ratios, population density, and variation in body size, sexual dimorphism, frequency of reproduction, and number of young produced. The information presented in the text is supplemented by numerous charts, graphs and tables, along with a handful of black and white photographs of the study sites. There are also 34 color plates featuring examples of the species studied.

The final Discussion and Conclusions section of the book sort of ties the whole study together. This section presents the collected data as a comparison between the individual species and gives a broad view of the interlocking parts that make up the ecological community.

I found *A Kansas Snake Community* to be an interesting and obviously well-researched book. The information sheds light on seasonal schedules, food, reproduction, growth, survivorship, and responses to weather and climate and their effects on the native snake population. This valuable information can be useful to predict the effects of human pressures on habitat, and alert us to the ecological harm that accompany unchecked development. While a little too in-depth for the casual reader, I believe this is a good book for herpetologists or reptile keepers to read, especially those that work with the studied species.

MONARCHS NO MORE ?

A new National Academy of Sciences Report warns that climate change in the Mexican mountain forests where monarch butterflies winter could make their refuge "too wet and cool," resulting in their endangerment in as little as 50 years says the *Topeka Capital-Journal*, AP. Each year, the monarchs migrate from as far away as Canada to the mountain fir forests west of Mexico City and experts maintain that the conditions they "need to survive the winter are not predicted to exist anywhere near the present overwintering sites." Monarchs have a "narrow range of temperature and wetness tolerance during the winter" that could lead to their extinction if they don't find the flexibility to adapt. *Source: GREENlines Issue #1993 11-18-03*

Just Released.....

Biological Information on Selected Mammals 4th Edition CDROM Version

A product of the American Association of Zoo Keepers, Inc.

The 1,396 page *Biological Information on Selected Mammal Species* CD covers a wide range from general, breeding, and young-rearing behavior to diet and physical descriptions of 590 species. The volume is in a PDF format allowing searches by Species (Common or Latin name); or Key words using the *Find* function; or by Species (Common or Latin name), Family; or Order using the *Bookmarks*. Table of Contents are given for Orders, Families, Species by Common Name, Species by Scientific Name, and Species by Order and Family. The Appendices cover a variety of information from behavioral patterns common to families (Bovid displays) to taxonomy (Primates). References are listed by Order and Family.

Biological Information for Selected Mammals CD Order Form

(Please type or print clearly)

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Bowling for Rhinos 2004

It's time to start planning for Bowling for Rhinos 2004. Please send in the information ASAP. Remember, if you want to be eligible to win the two-week trip to Kenya, all monies must be sent to me no later than **1 September 2004** and you **must** be a National AAZK member in good standing. If bowling isn't your thing, try Rock 'n' for Rhinos, Rummage for Rhinos, Run for Rhinos, or even Chapter donations are accepted! Every penny counts toward saving rhinos worldwide!

Contact person: _____

Zoo/Organization: _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

Phone:
Day - _____ **Night -** _____

Fax: _____ **E-mail:** _____

Will you be hosting a Bowling for Rhinos event this year?

YES

NO

When? _____

Would you like sample letters/flyers/posters?

YES

NO

Information and artwork may be downloaded from <http://bfr.aazk.org><

A multimedia CD which includes a BFR slide presentation along with the script, the 10-minute Lewa promo CD with David Attenboro as the narrator, and a 20-minute video on Ujung Kulon and Indonesia, along with a screen saver slide show is available free to any participating AAZK Chapter or institution that is sponsoring a BFR event in 2004. Contact Patty at address info on next page.

How many sponsor forms do you need (same ones as last year)?

Quantity desired: _____

Additional Comments:

Please Note: There is a \$25.00 registration fee required from each organization holding a BFR event (waived for first timers).



Please mail to: Patty Pearthree c/o BFR
318 Montibello Drive
Cary, NC 27513-2479
(919) 678-0449
e-mail: ppear3@aazk.org
BFR Website: <http://bfr.aazk.org>

2003 Conference Proceedings Order Information

If you are interested in ordering a copy of the 2003 Proceedings containing the papers presented at the AAZK National Conference held in Cleveland, OH, you will need to fill out and return the form on the next page with the appropriate payment. All orders **must** be prepaid in U.S. Funds ONLY. Conference Proceedings are planned to begin shipment in January 2004. Once shipped, domestic orders should take about two weeks; overseas orders within 10 days by air mail. Prices are as follows:

AAZK Member	\$25.00	Non-Member	\$40.00
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Postage for U.S. orders is included. Canadian orders should add \$5.00 per book for air mail service; all other countries should add \$10.00 per book for air mail service. Checks or money orders should be made payable to "AAZK, Inc." in U.S. FUNDS ONLY.

Note: Those presenters who correctly submitted their manuscripts on time for inclusion in the 2003 Conference Proceedings will receive one gratis copy. All others wishing a copy must place an order.

Papers included: To Russia with Love: A Synopsis of the Tenth Year of the Russian Crane Project with a Look to the Future ~ Guam Rail Reintroduction Project ~ Protocol Importance in the Husbandry of Gabriella's Crested Gibbons ~ AAZK Cooperative Partnerships: Working with Local and Regional Organizations on Conservation Projects ~ Raising Asia...Successfully Raising a Sloth Bear Cub ~ Experiences with Caribbean flamingo *Phoenicopterus ruber ruber* Chick Hand-rearing at the Birmingham Zoo ~ Cost-free Fundraising Through Printer Cartridge Recycling ~ Building Your Donor Network ~ Phoenix Rising: Tidbinbilla Nature Reserve ~ Recall and Crate Training in a Free-flight Aviary ~ Tracking Orangutan Ovulation Cycles Through Cytology ~ The Living Desert's Cheetah Ambassador Program ~ ABCs from A to Z: Animals, Business, and Conservation in Aquariums and Zoos ~ Managing the Socialization of a Speke's Gazelle at the Saint Louis Zoo ~ Perceptions and Data: The Effect of Estrus Cycles on a Non-reproductive Chimpanzee Group ~ The Evolution of the Night Keeper at Disney's Animal Kingdom ~ The Lake Malawi Aquarium and Quarantine System at Lincoln Park Zoo's Regenstien African Journey ~ Auditory and Olfactory Enrichment Trials in the Cougar *Felis concolor* ~ Project Golden Frog/Proyecto Rana Dorada ~ A Dog-gone Wild Time at the Minnesota Zoo ~ Behavior Management + AAZK + Zoo Members = Fun & \$ for Conservation at the Minnesota Zoo ~ "Are you looking for that furry black thing?" A Mixed Species Exhibit Featuring Malaysian Tapirs and Binturongs Makes for Some Strange Situations and a Wild Occupation for Zoo Keepers at the Minnesota Zoo ~ Developments in Breeding and Managing Cockatoos ~ Disney's Animal Kingdom Veterinary Services Wildlife Program ~ Transformation from Menageries to New Millennium Conservation Centre ~ The Survivorship of Captive-bred, Released Louisiana Pine Snakes ~ Tapping Teenage Talent ~ The Addition of a New Lemur Species into an Existing Multi-species Lemur Exhibit at the Hattiesburg Zoo ~ Developing a Multi-functional Callitrichid Nest Box to Combine with Operant Conditioning to Increase Animal Husbandry and Decrease the Potential for Stress when Chemical Restraint is Necessary ~ Environmental Enrichment: Achieving Zoo-wide Animal Enrichment Days Through Successive Approximation and Positive Reinforcement ~ The Role of Woodland Park Zookeepers in a Ferruginous Hawk Satellite Telemetry Project ~ A Zookeeper's Role in Exhibit Design ~ Striving for Successful Births in a Young Pair of Golden Lion Tamarins (*Leontopithecus rosalia*) ~ For Conservation's Sake: The Clouded Leopard Project ~ Translocation of Blue and Gold Macaw (*Ara ararauna*) into its Historical Range on Trinidad ~ *Homo sapiens* ~ The Hardest Animals to Train ~ "Running a Successful Internship Program at Your Facility" ~ Chiropractic Care in Animals ~ "An Alternative Approach to Geriatric Care" ~ Wildlife Management in Metropolitan Cleveland: Taking Conservation Beyond the Zoo ~ The Best Zoos in the 21st Century ~ Surplus Animals: Stewardship on the Ark ~ So Many Cats, So Little Time ~ The Enrichment Challenge ~ Changing Exotic Animal Ownership Regulations ~ When Plan A Becomes Plan Z: The Challenges of Shifting a Resistant Pair of Black Rhinoceros (*Diceros bicornis*) to a New Exhibit Through Positive Reinforcement and PATIENCE ~ Welcome to the Information Age: How to Find, Evaluate, and Use the Information You Need ~ Making a Difference with Bowling for Rhinos. **Poster Abstracts:** A Multivariate GIS Model to Determine Black Bear (*Ursus americanus*) Habitat Suitability in Eastern Ohio ~ Alternatives to Parent-rearing in Pteropus Species at the Lubee Foundation ~ Conditioning Male Rockhopper Penguins (*Eudyptes chryocome*) to Accept Voluntary Semen Collection ~ Penguins and Fish Can Co-exist ~ Improvised Rearing of Red-bellied Piranha (*Pygocentrus nattereri*) in an Endotherm-dominated Institution ~ Project Golden Frog ~ Cleveland Metroparks Zoo; Building a Breeding Herd ~ Enrichment: From Animals to Audience ~ Who Says You Can't Teach an Old Ram New Tricks? ~ Survival of the Fishing Cats: Successes and Failures in Fishing Cat Reproduction at the San Francisco Zoo ~ Developing Improved and Safer Control Measures for Helminth Parasites of Bears in Zoological Parks ~ The Enrichment Tree. **Workshops/Panel Discussions/RAP Sessions Summaries:** AAZK, Zoo Animal Staff, and Research - Why it's a good idea and how to get involved ~ Advances in Animal Keeping in Zoos and Aquariums ~ A new AAZK-AZA Professional Keeper Training Program ~ Amphibian Workshop ~ Animal Welfare, Enrichment, and the AZA: What do they mean to keepers? ~ Australasian RAP Session ~ Primate Workshop and More!

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**The 2003 Conference Proceedings
will be mailed in January 2004**

Order Now !

ABC's

ABC's: Animal Behavior Concerns and Solutions

A Question & Answer Forum for Animal Professionals

©2004 by Diana Guerrero, Independent Behavior Consultant
Ark Animals of California, Big Bear Lake, CA



Wild Animal Training 101: Wolf Training

Question: *I am looking for information on training wolves. Do you have any recommendations?*
(American Zoo)

Since you did not share any specifics about the species or environment that you are working in, I can only address your question in a general context. It doesn't matter what species you are working because training any animal incorporates the same types of techniques and strategies. Review and become familiar with the training literature.

To gain an edge, you will want to become familiar with the nuances involved within a particular species or breed. Therefore it is helpful to peruse the literature for specific papers, or species specialists, so you can glean additional insights.

Here are some general tips:

- Know your specific animals. Each will have individual quirks and nuances that will be important to note and that will affect the training process.
- Specific challenges will arise in relation to the environment you are working in. Ambassador animals working outside of the exhibit environment are usually handled differently and require more skill than working with exhibit animals where you are protected by a barrier.
- Habituation and rearing influences will be important to analyze when you are establishing your training program.
- Tolerant of restraint and new stimuli will be important to assess prior to intense training.
- Hierarchy or social structure will be more of a challenge if you are working within a group of animals.
- Breeding seasons and sexual maturity will be other influencing factors.

If you are looking for some close contact under expert guidance, you may want to consider two programs specifically related to the handling and management of wolves. The first is located at Wolf Park in Indiana. The facility conducts various courses related to wolf handling, provides good literature related to wolf behavior and training, and has staff versed in the training of wolves.

The other course is related to animal management and is conducted by Dr. Mark Johnson at Wildlife Veterinary Services out of Montana. He conducts his programs throughout the United States. They are specifically related to wildlife handling and chemical immobilization—and he conducts one specifically on wolves in California. These are held each January at the California Wolf Center.

Although these courses are not specifically what you are looking for, they give great training related to captive wolf management and help people glean better insights to wolf behavior.

Resources

Visit the behavior and training book area at www.arkanimals.com<

The page to visit for zoo training and behavior materials is currently:

<http://www.arkanimals.com/Ecommerce/Books/trainbk.htm>

Wolf Park (www.wolfpark.org)

4012 East 800 North, Battle Ground, IN, 47920.

Global Wildlife Resources (www.wildliferesources.org)

P.O. Box 10248, Bozeman, MT 59719-0248

(About the columnist: Since 1978 Diana L. Guerrero has worked professionally with both wild and domestic animals. Guerrero has been affiliated with and certified by a variety of animal programs in the USA and Europe. Based in California, she writes, consults, and leads safaris. Information on her animal career programs, training courses, and her newest book, What Animals Can Teach Us about Spirituality (SkyLight Paths, 2003) are available through her website. Questions for ABC's should be submitted to Diana directly through the ABC's questionnaire on her website, via email (zooit@arkanimals.com), or through regular mail: c/o ARKANIMALS.COM, PO Box 1989-215, Big Bear Lake, CA 92315 USA.)

The Little Rock Zoo AAZK Chapter is now offering for sale

"Eat, Drink, and Go Wild"

A spiral bound cookbook of recipes, photos, and animal facts.

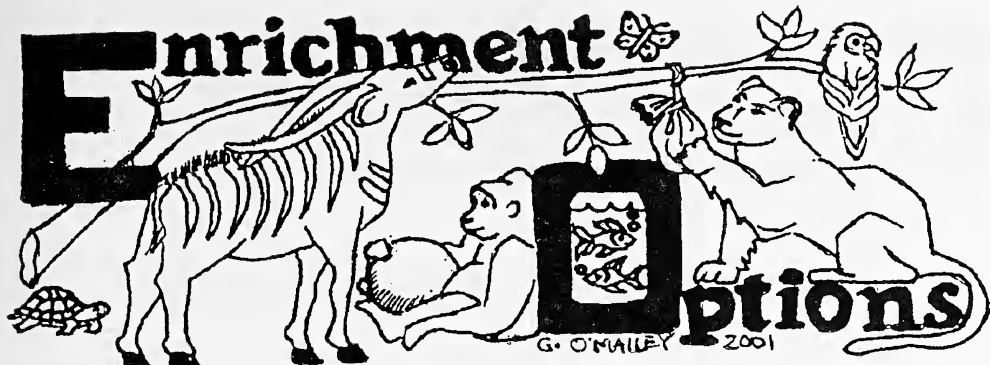
Eight sections of great tasting ideas!

To order send \$10.00 plus \$4.00 shipping and handling to:

Little Rock AAZK Chapter, c/o Little Rock Zoo

#1 Jonesboro Dr., Little Rock, Arkansas 72205

For information: Daphne Brock, dbcrock@att.net



*EO Editors - Dawn Neptune, Utah's Hogle Zoo
and Rachel Cantrell, Disney's Animal Kingdom*

The New and Improved Enrichment Options Column

Since the days of Robert Yerkes and Heine Heideger, enrichment has evolved into a dynamic process. Zoos across the country are now regarding enrichment as a process rather than just single device initiatives. Zoo staff are looking at enrichment as holistic, emphasizing many aspects of the animals' behavior and environment. Enrichment programs are focusing on the importance of having goals for enrichment initiatives and promoting species appropriate behaviors. Zoo staffs are documenting how their animals are reacting to initiatives and using this information to improve initiatives. Animals' individual and natural histories are being studied to develop more appropriate enrichment initiatives.

Because the enrichment process has evolved, we here at the Enrichment Options Column feel that it is time for us to evolve, too. We feel that you, our readers, are looking for more than just ways to create enrichment devices. You want to know the process surrounding enrichment initiatives. You also are interested in the philosophies and concepts around enrichment and how they work at other facilities. You want to know about documentation methods, determining behavioral goals for animals and promoting species appropriate behaviors.

We would like to roll out a new format for the Enrichment Options Column. We are looking for articles that discuss enrichment processes and philosophies as well as device articles. We are, however, looking for device articles to discuss not only the construction of the device but also goals, behaviors to be encouraged and documentation. In Figure 1, you will find an outline that defines what we would like to see in an article about a particular enrichment initiative. We also want to know about the processes at your institution and how they work for you.

Here comes the critical piece to this equation. We need you, our readers, because you are our most important contributors. We need you to submit articles for publication. We want to share information with institutions all over the world, but we can't do it without your submissions. We want to hear about how the enrichment process works for your facility. We want to know about specific enrichment devices that are working for your animals.

Thank you in advance for your contributions!

Sincerely,

Co-editors Rachel Cantrell and Dawn Neptune

Figure 1:

The following template (from Mellen & Sevenich MacPhee, 2001) is to provide a loose set of guidelines for enrichment initiative articles to be submitted to the Enrichment Options Column. The article should include, but is not limited to, the information outlined in the template.

I. Setting Goals

- a. What behaviors are you trying to encourage with this enrichment device?
- b. Are these behaviors species specific? Was the animal's natural/individual history used to develop goal behaviors?
- c. Does the initiative serve a higher purpose other than just promoting certain behaviors? (e.g. Puzzle feeders used to distract animals from aggressive behavior with conspecifics)

II. Planning

- a. Sketches of prototypes, materials needed (including possible sources)
- b. Cost analysis
- c. Approval process
- d. Safety concerns
- e. Resources (time, staffing, implementation needs, etc.)

III. Implementation

- a. How the device was delivered to the animal
- b. How often the device is utilized
- c. How long was it in with the animal to ensure novelty retention

IV. Documentation

- a. How did you document the animal's reaction to the device? (e.g. Wrote in daily report that animal used device, video taped animal using device, etc)
- b. Did you use any scientific methods to document the results?

V. Evaluate

- a. How did you ascertain that the enrichment was successful? (e.g. Checked daily records over time, visually saw animal utilizing enrichment...)

VI. Re-evaluate

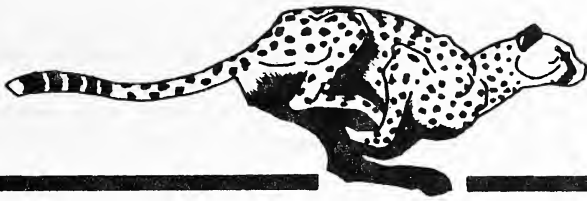
- a. Were any modifications made to the device after evaluating if it was successful?
- b. Are any future changes recommended to make the device function better, with greater ease, more safely, etc.?

References:

Mellen, J.; Sevenich MacPhee, M. 2001. Philosophy of environmental enrichment: Past, present and future. *Zoo Biology* 20: 211-226

www.animalenrichment.org

(You are invited to submit materials for the Enrichment Options column. Drawings and photos of enrichment are encouraged. Send to AKF/Enrichment, 3601 SW 29th St., Suite 133, Topeka, KS 66614-2054 USA. Eds.)



REACTIONS

A Question and Answer Forum for the Zoo Professional on Crisis Management

*By William K. Baker, Jr., Curator
Little Rock Zoo, Little Rock, AR*

Question

What types of reference materials are available for crisis management?

Comments

Historically, the number of reference materials on crisis management, zoological safety, and the associated logistics has been extremely limited. Thankfully, there have been several publications in the past few years which are now available on the market that cover incidents, reference material, policy development, and training recommendations.

Each book or manual has its own individual style and angle on crisis intervention. I honestly find myself reaching for any one work as much as the next. Each one brings something new to the table and lends itself to providing another facet to the overall development of a policy or strategy. It really depends on your institution's individual needs, physical location and the composition of the animal collection.

Reference Materials

Resources for Crisis Management in Zoos and Other Animal Care Facilities

Published by the American Association of Zoo Keepers, Inc. 1999

Editors: Chan, Susan D., William K. Baker Jr., and Diana L. Guerrero.

ISBN #1-929672-02-0

AAZK, Inc., 3601 S.W. 29th St., Suite 133, Topeka, KS 66614-2054

Prices are: AAZK Members \$45.00 Non Members \$60.00. Prices include domestic Book Rate Postage. Orders outside the continental U. S. should add \$10.00 for parcel post surface shipping.

Summary: The first book of its type written by and for the fields of zoology and wildlife management. Effectively every major aspect and discipline of the animal field was represented in the production of this 400-page book. Currently, **the first edition is sold out**, but a second edition may be undertaken at a later date. Still, copies may occasionally be found on Ebay® or may be available for viewing at a local zoo library.

AVMA Disaster Preparedness and Response Guide

Published by the American Veterinary Medical Foundation. 2001

AVMA, 1931 North Meacham Rd., Suite 100, Schaumburg, IL 60173

Prices are: \$50 for Members and Non Members. Shipping and handling is \$8.00 via UPS. Further information is available on their website at www.avmf.org.

Summary: A 500-page guide, three-ring binder of disaster resource information, which contains templates for writing animal disaster annexes to county and state emergency operations plans. The guide was designed primarily for veterinarians, veterinary technicians, emergency managers, and others interested in veterinary issues during disasters, or planning for animals in disasters.

Animal Management in Disasters

Published by Mosby, Inc. 1999

Author: Sebastian E. Heath; Editor: Linda L. Duncan.

ISBN # 1-55664-419-1

Mosby, Inc., 11830 Westline Industrial Dr., St. Louis, MO 64146

Prices are: Unknown, I purchased my copy from a book dealer at an AAZV Conference several years ago.

Summary: A 300-page book that covers all facets of disasters as they may impact agriculture, business, emergency management, and disaster relief. Primarily written for the domestic animal industry, but filled with an immense amount of data, tables, and statistics. While technical aspects are present, it provides an easy to follow format.

Conclusion

While each of the aforementioned works has a wealth of good information, I would also recommend visiting the AZA website at www.aza.org and reviewing the work on file in the Resource Center. Safe-Capture International, Inc. also produces a resource binder that covers chemical restraint. However, this binder is usually only available to students who attend one of the workshops. They can be contacted at www.safecapture.com. If more detailed information is needed on a specific author from one of these books, many present at conferences and their work can often be found in the proceedings.

Next Month: Can fatigue or stress play a part in compromising safety in the workplace?

If you would like to submit a question for this column or have comments on previously published materials, please send them to AAZK, Inc., 3601 S.W. 29th St., Suite 133, Topeka, KS 66614 Attn: Reactions/AKF

(About the Author: Since 1985 Bill has been active in the fields of science, zoology, and wildlife management. His education and experience include a B.S. in wildlife management and post-graduate studies in zoology, Lab and Museum Assistant, Shoot Team Leader, ERT Member, Large Mammal Keeper, Senior Keeper, and Zoo Curator at various zoological facilities. His area of research is crisis management in zoological institutions, which draws upon practical experience and training as a Rescue Diver, Hunter Safety Instructor, NRA Firearms Instructor, and Red Cross CPR/First Aid Instructor.)

New Condor Breeding Facility Opens

The Oregon Zoo (Portland, OR) has opened a new breeding facility for the California condor, the fourth in the world reports the *Oregonian*. The breeding program hopes to produce about 30 chicks annually for release in the wilds of California and Arizona, but "local officials hope eventually that some be reintroduced to the Columbia Gorge and other Oregon locations" where they have not been seen in a 100 years. The location of the breeding facility is remote and not open to the public because "handlers don't want the birds to get used to being around humans." The Oregon Zoo joins the San Diego Wild Animal Park and the Los Angeles Zoo as centers for condor captive breeding and wild-release programs. Source: *GREENlines Issue #2001 12-02-03*

Chapter News Notes

Wildlife World Zoo AAZK Chapter

The Wildlife World Zoo AAZK Chapter had their first fundraising activity and it was a huge success for us! We raised a total of \$1847.00 at our first Ice Cream Social. We donated \$1000 to Wild at Heart, a local non-profit raptor rehabilitation center in the Phoenix area.

Mickey Ollsen, Zoo Director, gave us permission to use the zoo after hours and for \$10 for adults and \$5 for children you could come into the zoo from 5:30pm until 8:30pm. We had the boat ride and train ride running for free to make it more of a draw for people to come in and, of course, everyone who came in also got a free bowl of ice cream.

We also had an educational show and then our guest speaker from Wild at Heart brought out a burrowing owl and talked about their organization and the plight of the burrowing owls with all of the new construction in the Greater Phoenix area.

Once the show was over, the silent auction started and was also a great success. Different members of the Chapter either solicited donations from local businesses or made some craft items for the auction.

We have also started an adopt-a-highway program for the mile of a major road by the zoo. (Which makes for an early morning for those of us who are working the days we go to pick up the road) But fun was had by all....!

---Beryl Patterson, Chapter Liaison



Our logo was designed by Beryl Patterson (our zoo vet tech). We adopted it February of this year when we were designated an AAZK Chapter. The animals in the logo are significant to our zoo and Chapter in that 1) we are very successful in breeding crowned cranes, Arabian oryx's and tigers; and 2) it also represents an animal from all of the main strings. (hoofstock, birds/primates and carnivores). The Chapter voted on it before we were officially a Chapter and we have since been using it on our letterhead and have made t-shirts/polos for all our members.

---Robyn Barfoot, President
Wildlife World Zoo AAZK Chapter

REMINDER

Chapter Recharter packets will be mailed in January. They are due back at AAZK Administrative Office no later than **1 March 2004** in order to avoid a \$100 late fee. If you have questions contact Barbara Manspeaker at 1-800-242-4519 (US); 1-800-468-1966 (Canada) or email at aazkoffice@zk.kscoxmail.com<

What's your AAZK Chapter been up to?
Send your Chapter News to the Editor at:
akfeditor@zk.kscoxmail.com

Legislative Update

Compiled by Georgann Johnston
Legislative Advisor
Sacramento, CA



USFWS Implements New Law on Polar Bear Hunting Permits

The U.S. Fish and Wildlife Service (USFWS) announced recently that there is a change in the requirements allowing the import of sport-hunted polar bear trophies from Canada. This action implements a 10 November 2003 Congressional amendment to the Marine Mammal Protection Act (MMPA), that will allow additional imports of certain trophies.

In its action, the Congress expanded the period for allowing grandfathered trophy imports. As a result of this change the Service can now accept applications from hunters for permits under the MMPA to import polar bear trophies legally taken prior to February 1997 from Nunavut or Northwest Territories, Canada. Prior to this amendment such trophies from currently deferred populations could be imported only if taken prior to April 1994. This action does not affect the requirements for imports of sport-hunted trophies taken after February 1997. Imports of trophies taken after that date can only be from approved populations. All import permits require a \$1,000 contribution to support international polar bear conservation programs. *Source: USFWS Press Release 4 December 2003*

Wildfires Result in Modifications of Endangered Species Act Regulations

The USFWS and NOAA Fisheries issued regulations in early December 2003 that will accelerate Endangered Species Act review of National Fire Plan actions, allowing land managers to better protect communities and wildlife habitat from catastrophic fires. Under the Endangered Species Act, federal agencies must consult with either USFWS or NOAA Fisheries whenever they authorize, fund, or carry out an action that may adversely affect a listed species or its designated critical habitat. The new regulations will improve the process by allowing trained biologists within these federal agencies to make the initial determination of whether there is likely to be an adverse effect. This will free up USFWS and NOAA Fisheries biologists from routine and often duplicative "informal consultations" and allow them to focus more attention on proposed actions that are more likely to have an effect on listed species.

The two agencies will continue the current practice of conducting "formal consultations" in cases where biologists determine a forest health project is likely to have an adverse effect. USFWS, NOAA Fisheries, the National Forest Service, the Bureau of Land Management, the Bureau of Indian Affairs, and the National Parks Service jointly developed the regulations. "All of these land-management agencies have biologists who have been trained to assess the likely impact of their actions on listed species," said USFWS Director Steve Williams. "By issuing these regulations, we are tapping into their expertise and accelerating review of much-needed forest health projects. We will also free up our biologists to address projects that actually have an impact on threatened and endangered species."

While the new regulations will accelerate reviews, they do not change any standards used for determining whether an action will have an adverse effect on a listed species. Listed species will receive the same level of protection as before. The expedited review is critical to restoring forests to health and preventing catastrophic fires. An estimated 190 million acres, an area twice the size of California, of federal forests and rangelands in the United States face high risk of catastrophic fire. Years of natural fuels buildup, coupled with drought conditions, insect infestation and disease make forests and rangelands in many areas throughout the country vulnerable to intense and environmentally destructive fires. Many ponderosa pine forests are 15 times denser than they were a century ago.

Where 25 to 35 trees once grew on each acre of forest, now more than 500 trees are crowded together in unhealthy conditions.

The National Fire Plan was developed in response to years of these catastrophic wildfires. The NFP is intended to reduce risk to communities and natural resources from wildland fires through rehabilitation, restoration and maintenance of fire-adapted ecosystems, and by the reduction of accumulated fuels or highly combustible fuels on forests, woodlands, grasslands, and rangelands

To further accelerate the implementation of the NFP, the President announced the Healthy Forests Initiative in August 2002. The Healthy Forests Initiative builds from the recognition that faster environmental reviews of proposed land-management projects will provide greater benefits to rangelands, forest, and wildlife by reducing the risk of catastrophic wildfire. *Source: USFWS News Release 3 December 2003*

The Netherlands Bans Cat and Dog Fur Trade

The Dutch House of Commons passed a resolution in November 2003 to ban the trade and importation of cat and dog fur and fur products in the Netherlands. Most cat and dog fur comes from Asian nations, including China, the Philippines, and Thailand. Additionally, Dutch-processed pelts are exported to retailers and wholesalers in Europe and North America.

Dog and cat fur is primarily used for fur-trimmed parkas, gloves, hats, stuffed animals and toys. As part of its ongoing investigation into the international trade in dog and cat fur, the Humane Society of the United States estimates that 20% of fur-covered animal figurines use dog and cat fur, with the remainder coming primarily from rabbits and goats. With rare exceptions, products using dog and cat fur are labeled deceptively.

By passing the resolution The Netherlands joins a small but growing group of nations to have a ban against the trade in dog and cat fur. In 2000 the U.S. Congress passed the "Dog and Cat Protection Act" which bans the import, export, and sale of products made from dog and cat fur. Denmark, France and Italy have also outlawed the trade, and Sweden may follow suit in 2004. *Source: Press Release of Information.com 15 November 2003*

Dead Whales for Science?

Japanese scientists are claiming that "some puzzling whales" killed by whalers in the 1970s are a "new species in a group of whales that have long been a subject of taxonomic confusion" reports the *New York Times*. Although some scientists contend more DNA analysis needs to be done, the possibly new species of whale is named *Balaenoptera omurai* and is part of the group of whales that include blue, fin, sei and minke whales. Japan maintains that the new findings resulted in part from its so called "research whaling" but conservationists responded that "the results raised the question of whether the hunters knew what they were hunting." *Source: GREENlines Issue #1997 11-24-03*

Extinction by the Numbers

A Rutgers University study indicates that "the destruction of every 120 miles of tropical forest or 60,000 square miles of rangeland causes a loss of hundreds of species" reports the *Green Bay News-Chronicle*. Another report by BirdLife International warns that "1200 bird species, or about 12% of the world's birds, have a real risk of becoming extinct in the next 100 years" an extinction rate that is "10,000 times faster than what would occur naturally." With "about 36% of extinction based on habitat destruction," the loss of species means "we will lose sources of pest control and sources of food for other creatures, and eventually ourselves." *Source: GREENlines Issue #1992 11-17-03*

DOD ESA-MMPA Exemptions Passed

Congress has passed exemptions to the Marine Mammal Protection Act allowing the Navy to "redefine activities considered harassment" of whales and other marine mammals reports *Greenwire*. Also

included in the Defense Department authorization bill was an ESA amendment that exempts DOD sites from critical habitat designations provided an “adequate natural resources plan is in place.” Conservationists called the exemption “the biggest rollback of the MMPA since it was enacted 30 years ago” and said the exemption “would cause more whale, dolphin and porpoise deaths” particularly after the Navy fully deploys its powerful new sonar systems. *Source: GREENlines Issue #1993 1-18-03*

House Panel Weakens Marine Mammal Protection

The House Resources Committee has approved changes to the Marine Mammal Protection Act that would make it harder for environmental litigators “to prove cases of harassment under the act because they’ll find it difficult to show any specific action is biologically significant, to a single animal or a group of animals” says the *S.F. Chronicle*. The changes, made as part of the process to reauthorize the 31-year old law, would help the Navy avoid legal challenges to using its long-range, low-frequency sonar and could aid industry groups that use similar technologies. *Source: GREENlines Issue #1989 11-12-03*

Rabies Ravages Ethiopian Wolves

The few hundred remaining Ethiopian wolves are being ravaged by an outbreak of rabies says *Yahoo News*, AP. In the last month, at least 20 of the endangered wolves died in one of their “critical breeding grounds” the Bale Mountains. Only 500 Ethiopian wolves are estimated to remain in the wild and a 1991 rabies outbreak killed nearly three-quarters of the 300 wolves there, a crash from which the “population only fully recovered in the last year or two.” The Ethiopian Wolf Conservation Program contends that vaccinating the wolves that have not been infected is crucial to keeping the outbreak from becoming an epidemic. *Source: GREENlines Issue #1990 11-13-03*

Thousands More Face Oblivion

Some 2,000 additional species have been added to the World Conservation Union’s (IUCN) “Red List” of the world’s most endangered plants and animals reports *BBC News*. The list now includes over 12,000 species which are in danger of joining the 762 plants and animals that have vanished into oblivion since AD 1500. This year’s annual catalogue of endangerment highlights the plight of native plants and animals on islands such as Hawaii, the Seychelles and Galapagos that are being driven to extinction by invasive species. Of the 125 endemic Hawaiian plants added to the list this year, 85 are threatened. According to the IUCN, “Human activities may be the main threat to the world’s species, but humans can also help them recover.” The Red List is online at: <http://www.iucnredlist.org> . *Source: GREENlines Issue #1994 11-19-03*

Wolves Boost Biodiversity

New research indicates that the reintroduction of wolves into Yellowstone National Park “appears to be boosting biological diversity around streams and helping nearly extinct stands of cottonwood trees flourish again” reports the *Oregonian*. The presence of wolves has changed elk behavior causing them to “avoid high-risk areas such as streambeds” giving young cottonwood and willow sprouts a chance to grow. The trees in turn, “decrease erosion and add cooling shade over the stream” improving habitat for birds and fish. The research also suggest that “the decline of aspen groves in Yellowstone and other areas of the Rocky Mountains may be at least partly because of the absence of wolves.” *Source: GREENlines Issue #1989 11-12-03*

Wolves Might Survive for Awhile, If....

A group of 11 wildlife managers and scientists asked by the USFWS to evaluate Montana, Wyoming and Idaho’s wolf management concluded the state plans “should maintain a viable population into the foreseeable future” if the federal government funds them says the *Seattle Post-Intelligencer*, AP. The peer review is part of the USFWS determination of whether ESA protection should be removed from wolves in the northern Rockies and the experts were “concerned about whether there will be enough money to properly manage wolves and how the states plan to monitor the animals.” *Source: GREENlines Issue #2002 12-3-01*

Institutions wishing to advertise employment opportunities are asked to send pertinent data by the 10th of each month to: Opportunity Knocks/AKF, 3601 SW 29th St., Suite 133, Topeka, KS 66614-2054. Please include closing date for positions available, and when setting these dates keep in mind that because of bulk-mail, most readers do not receive their AKF until the middle of the month or later. There is no charge for this service and fax or e-mail listings of positions which become available close to deadline are accepted. Our Fax is (785) 273-1980; e-mail: akfeditor@zkk.scoxmail.com< Listing may be sent as MS Word attachment. We are no longer located at the Topeka Zoo, so please note new address to avoid delays in processing.

Zookeeper - The Living Desert, Palm Desert, CA

The Living Desert is a medium-sized zoo located in the Palm Springs area of California, just two hours from the Pacific Ocean, two hours from Big Bear ski resort, and only an hour away from beautiful Joshua Tree National Park. We are currently accepting applications for keeper positions. All positions are full-time with paid benefits. This is an excellent opportunity for individuals interested in working at a growing, AZA-accredited institution. Please submit a resumé with cover letter by **15 February, 2004** to: Kim Clark, Assistant Curator, The Living Desert, 47-900 Portola Ave., Palm Desert, CA 92260. **Requirements:** Applicants must be able to lift 50 lbs and work weekends and holidays.

Keeper (Apes, Pachyderms, & Sea Lions) – Henry Doorly Zoo, Omaha, NE

Please, email resumé and questions regarding this position to Dan Houser (Supervisor of APS), at aps@omahazoo.com. This is a full-time position, with benefits. Starting wage is \$9.80 per hour. **Responsibilities:** Primarily the care and husbandry of elephants, gorillas, orangs, and rhino. Animal training, grounds, and building maintenance are also routine duties. A more complete detailing of job responsibilities and benefits will be emailed to interested candidates. **Requirements:** Seeking an individual with animal training experience, in a zoo or animal management facility. Experience in "protected contact" elephant management is highly desired. Must be willing to work weekends. **Closing date for all applications is 31 January, 2004.**

Reptile Internship

To apply send a cover letter, resumé, and at least two (2) (preferably 3) references to: Kristen Wiley, Internship Coordinator, Kentucky Reptile Zoo, 200 L & E Railroad, Slade, KY 40376. Or send via email to: kyreptil@pop.mis.net< Starting dates are flexible, but a minimum commitment of three months covering SPRING (April-June), or SUMMER (June - August), or FALL (September - November) is required. Deadlines for applications each year are: SPRING - February 1st; SUMMER - March 1st; and FALL - June 1st.

The Kentucky Reptile Zoo, a nonprofit organization, is seeking a student intern for the 2004 Fall season. The zoo is an educational exhibit, reptile breeding and venom research facility located near Kentucky's Red River Gorge and Natural Bridge State Park. **Responsibilities:** The intern will assist in the captive maintenance of the zoo's reptile collection, collect admissions to the exhibit, give interpretive talks and interact with the public, assist with educational outreach programs, and perform other duties as assigned. In addition, the intern will be responsible for the completion of at least one research project related to the field of herpetology. The intern will **not be involved** in the handling of any venomous reptiles. **Requirements:** Desirable qualifications include a willingness to handle snakes and other reptiles on a daily basis, ability to communicate effectively with people, writing skills, orientation to details, and self-motivation. The intern will be required to work both Saturday and Sunday, with days off during the week. Students majoring in the biological or natural sciences are preferred. Interns are required to be either college students or recent graduates. Former interns have arranged for

Big Cat Internships - Tiger Creek Wildlife Refuge (TCWR), Tyler, TX As seen on Animal Planet in "Growing Up Tiger", TCWR is a division of Tiger Missing Link Foundation.

Commencement date: On-going duration: three (3) months on a month-by-month basis. For additional information to see what past interns have to say about Tiger Creek, visit www.tigercreek.org< Are you

interested in learning more about big cats or establishing a career path working in conservation as a zookeeper, a wildlife manager or a veterinarian? You can Earn Your STRIPES at Tiger Creek and obtain college credit through your college or university at the same time, there are up to four (4) positions available. At Tiger Creek you are more than a worker, you are considered a friend and we strive to build long-term working relations as we know you are the future animal caretakers! Interns are utilized for permanent animal care positions through a qualification system with opportunity for full-time paid animal keeper positions available based upon performance after training. **Requirements:** You provide a six (6)-day work week with a strong commitment for three (3) months, be capable of paying attention to details and follow safety rules, you must have your own transportation to and from the refuge and provide your own food while here. We provide room & board, uniforms, materials and curriculum, indoctrination and safety training. We even throw in use of the "tiger truck" for errands and entertainment adventures that you seek out. Within the new Intern House there is central heat and air, all furnished, a full kitchen, with two full bathrooms, two rooms shared by two students, a shared telephone line for incoming calls, internet access for email and surfing, a VCR, TV and even Satellite so that you and the other interns can enjoy Animal Planet during your off hours! All of this and a few rescued dogs or puppies in the backyard...because we want your stay to be as comfortable as possible while here at Tiger Creek. The Tyler-East Texas area has a lot to offer, there is horse back riding available at no cost to our interns, lakes within beautiful parks, movie theaters, numerous local night clubs and plenty of restaurants and much more.

The following three (3) internship opportunities are available at the New Jersey State Aquarium - The New Jersey State Aquarium husbandry department is currently holding open enrollment on all our internships.

Avian Internship

Interested candidates should submit a cover letter and resumé, transcripts, three (3) letters of recommendation, and an application from our website at www.njaquarium.org. Please submit materials to: New Jersey State Aquarium, c/o Kyla Fox, One Riverside Drive, Camden, NJ 08103. Become familiar with daily activities involving our colony of African penguins, exotic birds, and reptile collection. **Responsibilities:** Duties include food preparation, exhibit maintenance, and creation of enrichment devices. **Requirements:** Candidates should be comfortable with public speaking and have course work in biology/psychology. Must be able to work outdoors and lift 50 pounds. Interns are required to complete a minimum of 120 hours and must be registered for college credits in either a two or four-year school. Internships may be completed during spring, summer, or fall sessions. All intern positions are on a volunteer basis and are unpaid.

Marine Mammal Internship

Interested candidates should submit a cover letter and resumé, transcripts, three (3) letters of recommendation, and an application from our website at www.njaquarium.org. Please submit materials to New Jersey State Aquarium, c/o Collette Caprio, One Riverside Drive, Camden, NJ 08103. Learn daily activities involving animal care and training with our Seal Team. **Responsibilities:** Duties include food preparation, exhibit cleaning, creating enrichment devices and observing training. **Requirements:** Candidates should be comfortable with public speaking, have course work in biology/psychology, prior animal experience, be able to work outdoors, and lift 50lbs. Interns are required to complete a minimum of 120 hours and must be registered for college credits in either a two or four-year school. Internships may be completed during spring, summer, or fall sessions. All intern positions are on a volunteer basis and are unpaid.

Fish and Invertebrate Internship

Interested candidates should submit a cover letter and resum, transcripts, three (3) letters of recommendation, and an application from our website at www.njaquarium.org. Please submit materials to New Jersey State Aquarium, c/o Nicole Grandinetti, One Riverside Drive, Camden, NJ 08103. The Fish and Invertebrate department offers internships each semester to qualifying candidates. **Responsibilities:** The interns main responsibilities will be assisting the biologists with their daily duties including exhibit and holding tank maintenance, food preparation, feeding, filter maintenance, and learning all aspects on maintaining saltwater exhibits. **Requirements:** Interns must complete 120 hours within the semester working two eight-hour days. The typical hours for the day are from 7:30am to 4:30pm. Interns are also required to be registered for credits through a two or four- year institution. All Interns work under a volunteer basis and are unpaid.

Big Cat Internship – Wildlife on Easy Street, Tampa, FL

For more information contact Scott Lope at 813-323-5991 or email at catfoto1@aol.com
Two (2) positions available for six-month internship at TAOS accredited non-profit big cat sanctuary. www.wildlifoneasystreet.com **Responsibilities** (include but are not limited to): daily husbandry, exhibit cleaning, diet preparation, feeding, operant conditioning and behavioral enrichment for the following

species: lions, tigers, leopards, cougars, lynxes, servals, caracals, bobcats, lemurs and other exotic animals. We provide invaluable hands-on experience, on-site housing and utilities, safety training and educational materials. Advanced training and long-term employment opportunities exist for the right candidates. **Requirements:** applicants must be willing to work six days a week, some holidays and follow strict safety guidelines. Hard work ethic and love of animals more important than degree.

Internships - The Florida Aquarium, Tampa, FL

Internships are available in Animal Health, Animal Programs and Husbandry departments. Internships available year-round for varying lengths of time and can be tailored to the individual student's needs. Internships are unpaid but provide valuable hands-on experience. Interested persons should send resumé to: Human Resources, 701 Channelside Dr., Tampa, FL 33602. For more information visit our website at www.flaquarium.org < **Responsibilities:** food preparation, feeding, cleaning enclosures, assist with medical procedures, animal observations, daily record keeping, enrichment activities, assist with training sessions and shows.

Aviculture Interns - Keauhou Bird Conservation Center, Hawaii and Maui

For more information on internships at **KBCC**, please send a resumé, cover letter, and the names and contacts of three (3) references to: Tracey Goltz P.O. Box 39 Volcano, HI 96785 or fax: 808-985-7034. **OR**, for more information on internships at **MBCC**, please send this information to: Mary Schwartz 2375 Olinda Road Makawao, HI 96768 or fax: 808-572-3574. For the Hawaii Endangered Bird Conservation Program at the Keauhou Bird Conservation Center (KBCC) on the Big Island of Hawaii and the Maui Bird Conservation Center (MBCC) on the island of Maui. **Responsibilities:** Daily tasks include husbandry duties such as: diet preparation, aviary and facility maintenance, behavioral observations of breeding birds, grounds keeping, predator control. **Requirements:** Applicant must be able to live with several roommates in a remote area and should show enthusiasm for work with captive endangered Hawaiian birds. Applicant must have a valid driver's license and health insurance. Internships last for a 3-6 month period. Interns receive \$20/day stipend plus housing. **Please, no phone calls or emails.**

Internship Opportunities - National Aquarium in Baltimore

To apply for any of the following internship positions go online at www.aqua.org/education/internships to obtain an application form. A complete application includes contact information, answers to brief statements listed, and a copy of college transcript. Complete applications should be sent to: National Aquarium at Baltimore-Internships, Pier 3/501 East Pratt St., Baltimore, MD 21202.

Application Deadline: ongoing - 1 November 2003 for January and Spring terms of 2004; 1 April 2004 for Summer and Fall 2004 terms; All interns must complete a minimum of 120 hours of work within the selected term. Interns must receive college credit for their internship. Internships are unpaid. For further information contact the National Aquarium in Baltimore's Internship coordinator at intern@aqua.org or call (410) 576-3888.

Aquarist Intern

Responsibilities: The selected candidate will assist the Aquarium aquarist staff with daily care of the Aquarium's invertebrates and fish. Assist with tank maintenance and cleaning; Prepare daily diets and perform daily feedings; Assist in the maintenance of back-up areas; Conduct precise record keeping; Perform special projects to be determined by the aquarist staff. **Requirements:** College juniors or seniors enrolled in an accredited college, pursuing a degree in Biology, Ecology, Environmental Science, or a related field. Must be able to lift 50 lbs, climb up a 6' ladder, and be able to squeeze across a 15' long x 12" wide platform.

Aviculture Intern

Responsibilities: The selected candidate will assist the Aquarium aviculture staff with daily husbandry activities in the South American Rainforest exhibit. Assist with and perform diet preparation and distribution; Conduct animal observations; Assist in the cleaning of holding areas, kitchen, and food prep areas; Provide enrichment to the aviculture collection; Perform special projects as determined by the aviculture staff. **Requirements:** Interest in working with birds. Enrolled in an accredited college, pursuing a degree in Biology, Zoology, Animal Behavior, Ecology, Environmental Science, or a related field.

Herpetology Intern

Responsibilities: Tend the "Hidden Life" exhibits (large wall terrariums where small, neotropical lizards, frogs, snakes and invertebrates are on public display); Mist and clean the off-exhibit colony of small arboreal lizards; Mist, clean and otherwise help tend the large, off-exhibit collection of neotropical frogs; Prepare diets for and feed the on and off-exhibit iguanas and tortoises; Tend the locust (live food) colony, orb-weaving spiders and colonies of non-venomous exotic arthropods (wood and hissing roaches, millipedes

and walking sticks); Assist in the maintenance of the live food cultures (fruit flies, springtails, crickets, rats, mice); Conduct and record animal observations; Perform special projects as determined by the herpetology staff. **Requirements:** Must be enrolled in an accredited college, pursuing a degree in Biology, Zoology, Animal Behavior, Ecology, Environmental Science or a related field. Must be comfortable working with frogs, lizards, rodents and terrestrial arthropods.

Horticulture

Responsibilities: The selected candidate will assist the Aquarium horticulture staff with daily activities. Assist with care of plants in the Rain Forest exhibits; Conduct plant maintenance, fertilization, propagation, and transplantation; Assist in display development; Perform special projects as determined by the horticulture staff. **Requirements:** Must be enrolled in an accredited college, pursuing a degree in Biology, Ecology, Environmental Science, or a related field.

Marine Animal Rescue Program (MARP) Intern

Responsibilities: The selected candidate will aid in all aspects of marine animals rescue program (MARP) operations, which involves the rescue, rehabilitation, and release of stranded marine mammals and sea turtles and implementing outreach efforts of the Aquarium's Ocean Health Initiative. The selected candidate is also responsible for technical and clerical assistance for the Conservation Department staff as necessary.

Duties include: Animal Care – participating in rescue and release trips, daily feeding, medical treatments, facility maintenance including cleaning and water changes, behavioral observations, and record keeping; Outreach – learning to interpret the MARP artifacts and conservation messages and participation in seasonal outreach and public education programs at the Aquarium and off site; Other duties as assigned – field work, etc. **Requirements:** Must be college junior or senior majoring in environmental science or related field with course work in biology and ecology. Summer and January terms require 40 hours per week of work for 4 weeks. Spring and fall terms require 8 hours per day, one day per week of work.

Marine Mammal Trainer Intern

Responsibilities: The selected candidate is responsible for providing support to the marine mammal training staff. This internship's primary purpose is to teach the intern training theory. ***There is limited hands-on animal contact during the internship.*** *Duties will include:* Prepares daily animal diets and dispenses vitamins as instructed; Responsible for the cleanliness and safety of all animal back-up areas; Assists in training, husbandry, and medical sessions; Participates in pre-show and pre-session preparations; Periodically participates in sessions involving swimming during enrichment and play sessions – no animals involved; Other duties as assigned. **Requirements:** Must be college junior or senior majoring in life science or related field. Must have a basic understanding of marine mammal natural history. Must have good swimming skills. Must work well as a team member. Summer and January terms require 40 hours per week of work for 4 weeks. Spring and fall terms require 8 hours per day, one day per week of work.

Water Quality Lab Intern

Responsibilities: The selected candidate will assist in the water quality testing of all fish and mammal systems throughout the aquarium. Duties include testing water for salinity, pH, ammonia, nitrite, alkalinity, and copper according to lab procedures, and recoding neat, accurate data. The selected candidate will work closely with the Lab Technicians and the Animal Husbandry staff. **Requirements:** Must be college junior or senior with general biology and chemistry work. Strong math skills and computer proficiency preferred. Must be available to work mornings.

SOS Rhino Seeks Volunteers

SOS Rhino is looking for volunteers interested in helping us in our efforts to save the Sumatran rhinoceros. Our Borneo Team is studying the demographics of the remaining animals in Tabin Wildlife Reserve to determine when patrol units, habitat protection, or translocation may play a role in the rhinos' survival. Please visit SOS Rhino's web site for detailed information: <http://www.sosrhino.org/programs/volunteer.php> Or contact Cindy Salopek, Projects Associate/SOS Rhino via e-mail at: cindy@sosrhino.org

*Positions posted with AAZK, Inc. may also be found on
our website at www.aazk.org*

*Also, you may want to check out the AZA Member Institution job listings
at <http://www.aza.org>*

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*A special "Thank You" to Kayla Grams for
putting together the 2003 Index*

Happy New Year !



Missy is a 2-year-old bobcat and she and her brother reside at the Western North Carolina Nature Center. In the midst of our hard working and sometimes hectic days, Missy was kind enough to provide us with something to put big smiles on our faces. I hope this works for you also.

Would'nt it be great if all our animals were this cooperative?

*submitted by Mary Jayne Churchill, Animal Naturalist
Primary Keeper Cats and Wolves
WNC Nature Center, Asheville, NC*

AAZK Membership Application

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**Animal Keepers' Forum
30th Anniversary
1974 - 2004**

ANIMAL KEEPERS' FORUM



**The Journal of the American
Association of Zoo Keepers, Inc.**

FEBRUARY 2004

Managing Editor: Susan D. Chan • **Associate Editors:** Kayla Grams, Lovell, WY & Mark de Denus, Reid Park Zoo • **Enrichment Options Coordinators:** Dawn Neptune, Utah's Hogle Zoo & Rachel Cantrell, Disney's Animal Kingdom • **Legislative Outlook Column Coordinator:** Georgann B. Johnston, Sacramento, CA. • **ABC's Column Coordinator:** Diana Guerrero, Big Bear Lake, CA • **Reactions Column Coordinator:** William K. Baker, Jr., Little Rock Zoo • **The Water Column Coordinators:** Dan Conklin and Kevin Shelton, The Florida Aquarium and Bruce Elkins, Indianapolis Zoo

Animal Keepers' Forum is published monthly by the American Association of Zoo Keepers, Inc., 3601 S.W. 29th Street, Suite 133, Topeka, KS 6661-2054. Ten dollars of each membership fee goes toward the annual publication costs of Animal Keepers' Forum. Postage paid at Topeka, KS.

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Biological Information (formerly Biological Values), 4th Edition - Jan Reed-Smith, Columbus Zoo

AAZK Enrichment Notebook 3rd Edition - Lee Houts, Folsom City Zoo

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About the Cover.....

Pictured on the cover is "Cujo", one of five springhare (*Pedetes capensis*) at the Lake Superior Zoo. Cujo shares his home with two females, Pikachu and Cinnamon, as well as their offspring, Ryachu and Gizmo (respectively). Cujo was born on 2/4/91, and has resided at the Lake Superior Zoo since 3/24/93. The artwork is by Jayme Christine, a Docent at the Lake Superior Zoo.

Looking like a mix between a kangaroo, rabbit, squirrel and gopher - not to mention a lioness tail, this rodent is the only species in its own family. Springhares are found in the arid south to southeast regions of Africa where they live a fairly solitary life in a complex system of sandy tunnels. Springhares are mostly nocturnal and feed on tubers and the occasional insect as well as some commercially grown crops. The female usually has one baby and can give birth up to four times throughout the year. Their lifespan in captivity is 10+ years. Springhare are also sometimes called springhaas. Thanks, Jayme!

Animal Keepers' Forum publishes original papers and news items of interest to the animal keeping profession. Non-members are welcome to submit articles for consideration. Articles should be typed or hand-printed and double-spaced. Authors are encouraged to submit their manuscripts on a disk as well as in hard copy form. Manuscripts submitted either on disk or electronically as attachments to an email should be submitted in Microsoft WORD. All illustrations, graphs, charts and tables should be clearly marked, in final form and should fit in a page size **no greater than 5.5" x 8.5"** (14cm x 22cm). Literature used should be cited in the text (Brown, 1986) and alphabetically in the final bibliography. Avoid footnotes. Include scientific name (as per ISIS) the first time an animal name is used. Thereafter use common name. Use metric system for weights and measurements (standard equivalents may be noted in parenthesis). Use the continental dating system (day-month-year). Times should be listed as per the 24-hour clock (0800, 1630 hrs. etc.). Glossy black and white **or** color prints (minimum size 3" x 5" [8cm x 14cm]) are accepted. Clearly marked captions should accompany photos. Please list photo credit on back of photo. Photographs may be submitted electronically as either JPEG or TIFF file attachments.

Articles sent to Animal Keepers' Forum will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for AKF. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the editor. The editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed, appropriately-sized envelope. Telephone, fax or email contributions of late-breaking news or last-minute insertions are accepted as space allows. Phone 1-800-242-4519 (US); 1-800-468-1966 (Canada); FAX (785) 273-1980; email is akfeditor@zk.kscoxmail.com

Deadline for each regular issue is the 10th of the preceding month.

Dedicated issues may have separate deadline dates and will be noted by the editor.

Articles printed do not necessarily reflect the opinions of the AKF staff or the American Association of Zoo Keepers, Inc. Publication does not indicate endorsement by the Association.

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AAZK Website Address: www.aazk.org

BFR Website: <http://bfr.aazk.org>

Scoops & Scuttlebutt



Lewa Adopt-A-School Program Soars

The AAZK-sponsored project to provide assistance to the Lebarua School in the form of a school lunch program has exceeded its initial goal of raising \$3,526.00. Due to the extreme generosity of a number of AAZK Chapters and individual AAZK members, the total amount raised as of this writing is \$3,526.00. Due to the success of this program, Bowling for Rhino Coordinator Patty Pearthree is checking into the possibility of also assisting another school located in the Lewa Wildlife Conservancy area in Kenya.

The most recent donations came from the Cleveland AAZK Chapter, whose wonderfully successful 2003 National AAZK Conference, allowed them to donate \$2000.00 to the Adopt-a-School project. The Utah Chapter of AAZK has also sent in a check for \$500.00 to support this effort. We thank these two Chapters for their generosity and support!

Previously recognized contributors to the Adopt-A-School project are the Dallas, Virginia, Point Defiance, Orange County, Metro Boston, and Lincoln Park AAZK Chapters; and individual AAZK members Andrew Main, Linda Kunze, Linda Brown, Laura Reisse, Tuula Skidmore, Miriam Dailey and Rhonda Wozniak; and "Friends of Lewa" - Brenda Gunder, Erin Roehrman, Helen Pflughoeft, Cynthia Hoffman and Jan Cambridge-Lewis. Thank you one and all!

PJC Zoo Animal Technology Program / UWF Zoo Science

The Pensacola Junior College zoo animal technology program is now accepting applications for entry in August 2004. This is a two-year associate of science degree program offered as a cooperative effort of PJC and The ZOO in Gulf Breeze FL. The program includes general education, a comprehensive series of academic courses in animal biology, specialized zoo topic courses, and practical animal care, medical husbandry, and exhibit repairs skills courses. "The degree articulates into the Zoo Science B.S. program at University of West Florida (also in Pensacola) if desired. Application packets may be obtained from the PJC biology department secretary at (850) 484-1168 or on the web at <http://itech.pjc.edu/jkaplan/zooschool/> and further information is available by contacting Joyce Kaplan, PJC Zootech Director, at jkaplan@pic.edu or (850) 484-1164.

Cleveland Matching Funds Challenge Deadline is April 1st

So you thought the "Cleveland Challenge" was over? Think again. We're back. We know... you can't get rid of us. We just enjoyed planning the 2003 AAZK Conference so much that we thought we would continue you on with the next phase. We have decided to institute the "Cleveland Challenge-Round 2."

Since the "Cleveland Challenge" encouraged so many of you to donate to our conference, we want to now encourage you to donate to AAZK, Inc. So here's the rules: for any Chapter donating to AAZK, Inc. we will **match your donation** dollar for dollar up to \$5000 from now until **1 April, 2004**. AAZK, Inc. needs all of our support, and this way your dollars will be worth double. So when you are thinking of where to send your Christmas fundraising money, or you are thinking of adding a little extra in your recharter package, think of the "Cleveland Challenge-Round 2."

AAZK Administrative Office will send us a listing of Chapter donations after the 1 April deadline and we will match them up to \$5000. Let's keep AAZK, Inc. moving forward by supporting the Association's programs and projects.

Bear Keepers Encouraged to Respond to Survey

Bear keepers (of any species) are encouraged to respond to a husbandry survey (for my Bear TAG-approved study) which is available online at http://www.jordanschaul.com/res_int.htm or may be accessed by clicking on the "research" header of the home page of my website (www.jordanschaul.com), one can also be directed to my research page. One can also scroll down the page and click on links to the questionnaire. Pdf & MS WORD files are available to download. One can type directly on the WORD version and email it back to me. Printouts can be sent via FAX to me at 614-292-4142 or mailed to the following address: Attn: Jordan C. Schaul, College of Veterinary Medicine, The Ohio State University, 1920 Coffey Rd., Columbus, OH 43210.

Research Listserve Available

The Keeper/Aquarist Research Network (formerly Keeper-Research Network) is an AZA listserv. As current moderator, I have chosen to keep it "open" for any interested individual AZA member and have enlisted several non-AZA members (keepers). I have approximately 90 subscribers from around the world (including husbandry personnel, trainers, curators, zoo researchers, and academic researchers). To enlist, one simply need to email me at jordansc@jordanschaul.com and I will add them to the list.

The forum facilitates research communication among husbandry personnel, zoo researchers and zoo-affiliated researchers from academic institutions. The listserv provides individuals seeking research opportunities a chance to correspond with potential mentors and/or collaborators working on taxa of common interest. --submitted by Jordan Schaul, Ohio State University

AAZK Announces Availability of Granting Programs

The American Association of Zoo Keepers announces the availability of two granting opportunities:

The Conservation, Preservation and Restoration (CPR) Grant – This \$1,000.00 grant is designed to encourage and support efforts in conservation conducted by keepers and aquarists in zoological parks and aquariums around the world. Members of AAZK, Inc. in good standing are eligible to apply and receive this grant. The member MUST have an active role in the conservation effort submitted for consideration. The division of this grant between two projects is at the discretion of the CPR committee. Funds are made available only after a progress report and receipts have been submitted.

The Zoo Keeper Grants in Research – Two \$1,000.00 grants are funded annually to encourage and support noninvasive research conducted by keepers in zoo and aquarium settings. The principal investigator MUST be a full-time keeper and a member of AAZK, Inc. in good standing.

Deadline for application submission for either grant option is 01 June 2004. Successful grant recipients will be announced at the AAZK National Conference in Fall 2004. The grant cycle runs from 01 January 2005 to 31 December 2005. For further information or an application, see the AAZK Website at www.aazk.org, or contact Jan Reed-Smith, AAZK Grants Committees' Chair, jrsotter@iserv.net, 616-693-2680, Fax: 616-374-3263. Please specify which grant program you are interested in.

Borneo Rhino Challenge: Trek, cycle, and quest for the Sumatran Rhino of Borneo

SOS Rhino and Save the Rhino International invite you to climb to the summit of Mt. Kinabalu, cycle the Northern tip of Borneo, and help us search for the elusive Sumatran rhinoceros of Borneo. For more information on this important fund-raising adventure, please visit SOS Rhino's website at <http://www.sosrhino.org/index.php>, or contact Cindy Salopek, Projects Associate, via email at cindy@sosrhino.net

ZooLex Template Now Available in Several Languages

Thanks to Alla Nikitina, Zoo Information Center at Kyiv Zoo in Ukraine, Ivan Lozano Ortega, animal scientist and zoo consultant in Columbia, and Eric Plouzeau, DVM and Director of the Zoo in Lyon in France, ZooLex is now able to offer a Russian, a Spanish and a French translation of the ZooLex Template as well as the original English version. The Template is a form that everybody can use for describing a given animal exhibit in all its aspects. Submission to the ZooLex Gallery is done primarily through the use of the ZooLex Template. The ZooLex Template is available in pdf and in MS-Word.doc format at <http://www.zoolex.org/friends.html>

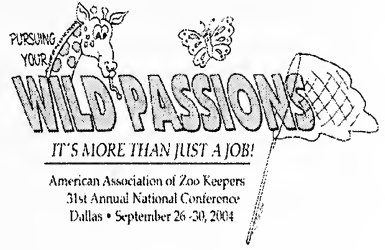
ZooLex is a professional website on zoo design which was launched in September of 2000 and is designed and maintained by the ZooLex Zoo Design Organization, a non-profit organization based in Vienna, Austria. When you are looking for information on animal exhibit design and construction, the ZooLex website is a great place to start. A database and a search engine will help you to find information on specific animal species, certain zoos, special products and services and companies which offer them.

(Editor's note: If you would like to read more about ZooLex, check out the four-part series which ran in Animal Keepers' Forum from March through June of 2002.)

Dallas 2004 - "Pursuing Your Wild Passions" - September 26th - 30th

The Dallas 2004 AAZK Conference Committee would like to congratulate the Greater Houston Chapter for being the first to respond to the Chapter Challenge 2004. Thanks for your support.

What is Chapter Challenge 2004? In order to keep delegates' cost to a minimum, while ensuring the best possible conference, we are encouraging Chapters to donate. If your Chapter contributes \$250.00 or more, they will be entered into a drawing. The winning AAZK Chapter will receive one full registration and one double occupancy room for five nights at the Adam's Mark Hotel (Sept 26-30, 2004). Letters detailing all the information were sent to all AAZK Chapters in January. Start planning now to meet the challenge!!!



For everyone looking for the latest information on this year's conference, please visit our web site www.dallaszoo.com and click on 2004 AAZK conference. This will take you directly to our conference home page. Contact information is also provided if you have any additional questions. Program information/call for papers will be published in the March *AKF*. We look forward to seeing everyone in September!!!!

Chapters Reminded About Recharter Packets - DEADLINE MARCH 1st

Recharter packets were sent out at the beginning of January to all AAZK Chapter Presidents. They must be returned to Administrative Offices **by 1 March 2004** to avoid paying the \$100.00 late fee. If you have questions about filling out the forms, contact Barbara Manspeaker at 1-800-242-4519 (US) or 1-800-468-1966 (Canada). You may also email Barbara at aazkoffice@zk.kscoxmail.com. Make certain when you return your packet that you have completely filled out the forms, have included your recharter fee check made out to "AAZK, Inc.". Be sure to keep a copy for your chapter's files. Return of these forms is part of the Association's obligations to the Internal Revenue Service under our 501(c)(3) nonprofit tax-exempt status. Failure to have forms returned by all of AAZK's chartered Chapters puts that tax-exempt status in jeopardy. Your full cooperation is greatly appreciated.

From the Bowling for Rhinos Chair

Please send your 2004 Bowling for Rhinos event date and contact information ASAP to: PattyPearthree, c/o BFR, 318 Montibello Dr., Cary, NC 27513. Chris Hartley from the Blue Rhino Gas Company will then contact local Blue Rhino companies in your area to get their support and participation in your event. Look for the BFR insert in the January 2004 issue of *AKF*.

Correction

In the Book Review section last month, under the review of "A Kansas Snake Community", reviewer Jeremy Konwiser mistakenly referred to snakes as "invertebrates" which, of course, they are not, and this editor did not catch the error. Thanks to AAZK member (and 25-year snake breeder) Kurt Barlet of Los Angeles, CA for keeping us honest!

MOVING?

Please let us know when you change your address! It now costs AAZK 99 cents every time an *AKF* is returned because of an incorrect address. Call 1-800-242-4519 (U.S.) or 1-800-468-1966 (Canada) or e-mail aazkoffice@zk.kscoxmail.com to report your new address.

Coming Events

International Association of Avian Trainers and Educators (IAATE) - 18-21 February, 2004 in Toronto, Canada. Hosted by the Toronto Zoo. For more information call (416) 392-6008 or email kbucklc@sympatico.ca, hamiltonk2000@rogers.com<

National Wildlife Rehabilitators Association-Preserving Our Natural Treasures Symposium 2004 - 2-6 March, 2004 in Orlando, FL. For more information please go to <http://www.nwrawildlife.org> or email, nwra@nwrawildlife.org

AZA Western Regional Conference - 17-20 March 2004. Hosted by Santa Barbara Zoo. For information contact Nancy McToldridge at (805) 962-5339.

The Felid TAG Annual Conference Meeting - 26-28 March, 2004 in Albuquerque, NM. Due to a scheduling conflict the Felid TAG meeting has been rescheduled to these dates. Hosted by the Rio Grande Zoo. The SSP meeting will take place 24-25 March. For more information please contact Lynn Tupa at (505) 764-6216. ltupa@cabq.gov; or Gwen Dragoo at ((505) 764-6262, gdragoo@cabq.gov<

4th Annual Animal Behavior Management Alliance (ABMA) Conference - 4-9 April, 2004 To be hosted by The National Aquarium in Baltimore and The Baltimore Zoo and held at The Renaissance Harborplace Hotel in downtown Baltimore. For more information: <http://www.thecabma.org> or contact Sue Hunter at shunter@aquaria.org or 410-576-1186. This conference will provide attendees with basic through advanced training theory and methods through lectures and workshops. Attendees will learn how positive training methods can be applied to zoo and aquarium animals, laboratory animals, farm animals, and pet animals to enhance their care and welfare. Site visits to the zoos and aquarium will provide first hand experiences with trainers and animals with live demonstrations of training and enrichment. In addition to tours and workshops, the conference will include 20-minute formal presentations, plus posters, and video sessions. Submissions will be considered for inclusion in the conference proceedings for the benefit of other animal professionals. The conference will focus on animal enrichment and positive reinforcement training as tools for better behavior management of animals in any setting.

AZA Traveling Training - 24-30 April 2004. To include Keeper Training Course. At the Houston Zoo, Houston, TX. Contact Alexis Weider, Training Administrator at (301) 562-0777, Ext. 256.

AZA Eastern Regional Conference - 12-15 May 2004. Hosted by Louisville Zoo. For information contact Sandra Allen (502) 238-5608.

AZA Otter SSP* "Otter Keeper Workshop"- 2-4 June, 2004. To be held in conjunction with International Otter Colloquium (see next listing). The workshop registration fee is \$50.00 with enrollment limited to 20 participants. Lodging and meals are available at the university for roughly \$65.00 per day (includes three

meals). For additional information contact jrsotter@iserv.net or go to the Knoxville Zoo website (www.knoxvillezoo.org) for a registration form.

IX International Otter Colloquium - 4-10 June, 2004 at Frostburg State University, Frostburg, MD. Theme is "Otters: Ambassadors for Aquatic Conservation". For more information go to <http://otter.frostburg.edu><

The Care and Management of Chimpanzee Workshop - 18-20 June, 2004. Sponsored by the Chimpanzee SSP® at the Saint Louis Zoo, St. Louis, MO. A comprehensive three-day course covering all aspects of progressive chimpanzee husbandry. Topics include managing complex social groups, operant conditioning training, social introductions, contraception strategies and enrichment programs. Registration is \$65.00 and includes program materials and lunches. Limited spaces available. For information contact Steve Ross, Chimpanzee SSP Coordinator at ross@lpzoo.org or by calling (312) 742-7263.<

2004 Gorilla Workshop - 25-28 June, 2004 in Calgary, Alberta, Canada. Hosted by the Calgary Zoo. Look for more details and registration information as they become available at their website - <http://2004gorillaworkshop.tripod.com><

AAV 25th Annual Conference & Expo - 16-20 August 2004 - in New Orleans, LA at the Sheraton New Orleans Hotel. For further information call (303)756-8380 or visit www.conferenceoffice.com/aav<

Joint Conference of the American Assoc. of Zoo Veterinarians, the Wildlife Disease Assoc. and American Assoc. of Wildlife Veterinarians - 27 August-3 Sept., 2004 in San Diego, CA. For additional conference info, contact Wilbur Amand, VMD, Executive Director/AAZV at (610) 892-4812 or email - AAZV@aol.com<

25th Annual Elephant Managers Association Conference - 14-17 October, 2004 in Tulsa, OK. Hosted by Tulsa Zoo and Living Museum. Pre- and post-trips scheduled to Dickerson Park Zoo and Riddle's Elephant and Wildlife Sanctuary (18 Oct.). For more info email: karendunn@ci.tulsa.ok.us or visit www.elephant-managers.com and/or www.tulsazoo.org<

Carnivores 2004: Expanding Partnerships in Carnivore Conservation - 14-17 November, 2004. Presented by Defenders of Wildlife in Santa Fe, NM. Features three full days of sessions on terrestrial and marine carnivore issues, plus a poster session, field trip, silent auction, banquet and ambassador wolf sessions. Please visit conference website at www.carnivoreconference.org or leave a message at (202) 789-2844 ext.315 for details. Abstracts for papers being accepted until 1 June 2004.

Post Your Coming Event Here - email to akfeditor@zk.ksoxmail.com

AAZK Announces New Members

New Professional Members

Jean Katarousky and Aurora Flores, **Zoo New England (MA)**; Bethany Baldwin, **Beardsley Zoo (CT)**; Peter W. Kriz, **The National Aquarium in Baltimore (MD)**; Natalie Boyle, **Elmwood Park Zoo (PA)**; Kristen Shumway, **NC Museum of Life & Science (NC)**; Kelly Kimball, Emily Kennedy and Leah Broskovetz, **The Zoo at Gulf Breeze (FL)**; Cathleen Wise, **Knoxville Zoological Gardens (TN)**; Sarah L. Foote, **Potter Park Zoo (MI)**; Katie Henessy, **Lincoln Park Zoo (IL)**; Jennifer Cormack, **Lee Richardson Zoo (KS)**; Erin Luff, **International Exotic Feline Sanctuary (TX)**; Megan Lumpkin, **Dallas zoo (TX)**; Jennifer McLain, **Houston Zoo (TX)**; Jilda Tresz, **The Phoenix Zoo (AZ)**; Robin Haeffner-Matos, **Flamingo at Las Vegas (NV)**; Tania Prebble, **Greater Los Angeles Zoo (CA)**; Sabreena Costa, **Applegate Park Zoo (CA)**; and Dana Courtney, **San Diego Zoo (CA)**.

Renewing Contributing Members

A.J. Higginbottom
HMS Zoo Diets, Inc., Bluffton, IN

Renewing Institutional Members

Santa Fe Community College Teaching Zoo
Gainesville, FL
Jack Brown, Director

F.O. Wilson Zoo Library
Oklahoma City Zoo, Oklahoma City, OK
Bert Castro, Director

Frank Buck Zoo
Gainesville, TX

Rainforest & Aquarium at Moody Gardens
Galveston, TX

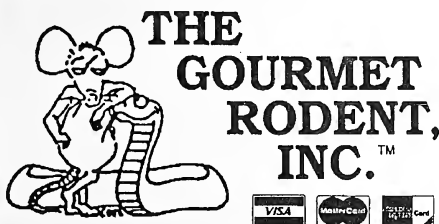
CHCI Apprentice Program 2004

The Chimpanzee & Human Communication Institute (CHCI) is currently taking applications for our 10-week Summer Apprentice Program. Graduates, undergraduates, and post-graduates from various academic backgrounds (e.g. Anthropology, Biology, Psychology, Linguistics, Philosophy, etc.) are encouraged to apply. This program is open to students from all universities and post-graduates. The dates of the program are 13 June to 20 August 20, 2004.

The research at CHCI involves a group of four chimpanzees who use the signs of American Sign Language (ASL). Each chimpanzee was raised in an enriched environment in which his or her human family members used only ASL, much like the environment in which a deaf human child grows up. Currently, the chimpanzees reside at the CHCI on the campus of Central Washington University in Ellensburg, WA in a large state-of-the-art facility.

Apprentices are at the institute daily, cleaning enclosures, preparing meals and enrichment, making observations of the chimpanzees, and participating in one or more research projects. The first week is intensive training in laboratory jobs and chimpanzee behaviors. The philosophy of CHCI is that the needs of the chimpanzees come first. Apprentices are trained in humane care and research techniques. After several weeks each apprentice becomes more autonomous and has responsibilities in the research project.

The program fee is \$1800 and there is a non-refundable \$25 application processing fee. This does not include housing and transportation. Inexpensive housing is available on campus. A course in ASL is highly recommended but not required. For more information on the program and the application please see our web page at or contact Dr. Mary Lee Jensvold, CHCI, CWU, Ellensburg, WA 98926 summerapprentice@hotmail.com. The deadline to apply is 24 March, 2004.



RATS AND MICE

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AAZK Award Nominations Are Now Being Accepted for 2004

The AAZK Awards Committee is accepting nominations for the **Lifetime Achievement Award (LA)**, the **Meritorious Achievement Award (MA)**, and the new **Environmental Enrichment (EE) Award**. Nomination criteria for these three awards are listed below. Nomination criteria for the **Jean M. Hromadka Excellence in Zookeeping Award (EZ)**, **The Certificate of Merit for Zoo Keeper Education (CMZE)**, and **The Certificate of Excellence in Exhibit Renovation (CEER)** were published in the January 2004 issue of *AKF*. These awards will be presented at the 2004 AAZK Conference in Dallas, TX. The deadline for all award nominations is **1 June 2004**. Information concerning the qualifications, nomination procedure, selection procedure and an explanation of the awards may be obtained by contacting Janet McCoy, Chair, AAZK Awards Committee, Oregon Zoo, 4001 S.W. Canyon Rd., Portland, OR 97221.

Lifetime Achievement (LA) Award

The American Association of Zoo Keepers, Inc. (AAZK) is the administering organization of the Lifetime Achievement Award presented by the AAZK Awards Committee. This award is to be given at the end (retirement) of a keeper's career. The purpose of the award is to recognize outstanding commitment to professionalism as a zoo keeper over a long period of time, and significant contributions to the community.

The Lifetime Achievement Award was established by the 1993 Awards Committee, Janet McCoy, Chair. Rachel Rogers proposed the award to the AAZK Board of Directors. The award is presented at the annual AAZK National Conference.

Qualifications:

1. The nominee **must** be a full-time keeper retiring from a career of zoo keeping and employed in any North American zoological institution, aquarium or related facility.
2. The nominee must have been employed at least twenty years on permanent status at a zoo, aquarium or related facility.
3. The nominee **must** be nominated by **two** of his or her peers who have also been employed at that same zoo, aquarium or related facility. Supporting nominations may be submitted by management personnel from the same institution.

Nomination Procedure:

1. List name, position, institution's name, address, phone and Director, years of service in the field and the recommendation of peers or colleagues.
2. List and **document** outstanding achievements: exhibits, breeding, education, project participation, papers, etc. **Verification** of these facts must be signed by the zoo director, curator, or immediate supervisor of the individual being nominated.
3. Describe extra activities outside of zoo, aquarium or related facility work: working with conservation groups, animal related youth groups, rehabilitation wildlife officials, etc.
4. Paragraph of why the nominee fits the criteria.
5. Provide 3 - 5 references.
6. Deadline for nominations is **JUNE 1st** of each year.

Selection Procedure:

The Awards Committee, consisting of five keepers, will independently review each nominee.

Meritorious Achievement (MA) Award

The American Association of Zoo Keepers, Inc. (AAZK) is the administering organization of the Meritorious Achievement (MA) Award presented by the AAZK Awards Committee. The purpose of the award is to recognize professional members of AAZK and AAZK Chapters, in good standing in the Association, for their extra work performed outside the keeper level of performance. This includes keeper participation in AAZPA Bean Award projects, dedicating time to other zoo related projects (conservation, wildlife education and individual breeding projects) and educating others in such programs as Scout Patch Programs.

The MA was established in 1982, by Mike Crocker, 1980-1985 CHAIR, as a means of recognizing work done outside of the scope of the Excellence in Zookeeping award. It is the only award presented by the awards committee that you have to be a member of the Association to receive. The award is presented at the annual AAZK National Conference.

Qualifications:

1. The nominee must be a full-time keeper and professional AAZK member employed in any North American zoo, aquarium, or related facility. In the case of an AAZK Chapter, it must be 'in good standing' having an up-to-date charter with the AAZK.
2. The nominee must have been employed at least one year on a permanent basis at a zoo, aquauium or related facility. In the case of an AAZK Chapter, it must have been active for at least one year.
3. The nominee must be nominated by his/her peers or colleagues, while supporting nominations may be submitted by other zoo, aquarium or related facility personnel. The nominators need not be from the same institution.

Nomination Procedure:

1. List name, position, institution's name, address, phone and Director, years of service in the field and the recommendation of a peer or colleague.
2. List and **document** the outstanding achievements: AAZPA Bean Award project participation, exhibits, breeding, conservation, etc.
3. The deadline for nominations is JUNE 1st of each year.

Selection Procedure: The Awards Committee, consisting of five keepers, will independently review each nominee.

The character of the award includes either a plaque or certificate, letter of notification to the institution's director and national recognition by professional journals. Such journals include: the American Zoo and Aquarium Association (AZA) and the Canadian Association of Zoos and Aquariums (CAZA) Newsletters, Animal Keepers' Forum (AAZK), Awards, Honors and Prizes: Volume 1; United States and Canada. The latter is published by Gale Research Company based in Wheaton, MD and found in medium to large sized libraries across the U.S. and Canada.

Deadline for Nominations is 1 June 2004

Environmental Enrichment (EE) Award

The American Association of Zoo Keepers, Inc. (AAZK) is the administering organization of the Environmental Enrichment (EE) Award presented by the AAZK Awards Committee. The purpose of the award is to recognize outstanding keeper-initiated contributions to the art and science of environmental enrichment. It is hoped that recognition of outstanding efforts by keepers to improve animal care and welfare through environmental enrichment will provide incentive to keepers to continue to be leaders in this important endeavor.

The EE Award was established in 2001 by the AAZK Enrichment Committee. Lee Houts proposed the award to the AAZK Board of Directors. The award is presented at the annual AAZK National Conference.

Qualifications:

1. The nominee may be an individual, group, project or program that has improved the well-being of an animal or group of animals through outstanding keeper-initiated enrichment techniques.
2. Nominees must have excelled in one or more of the following categories:
 - Innovative techniques developed, implemented and evaluated.
 - Creative fundraising efforts implemented which increased the availability of enrichment items for staff to utilize.
 - Motivation of staff, volunteers and peers through development of an enrichment infrastructure that increased participation in in-house programs or disseminated information to the zoo community to advance the art and science of environmental enrichment.
3. The nominee must be nominated by a keeper.

Nomination Procedure:

1. List name of keeper(s) who initiated the enrichment, institution's name, address, phone and Director.
2. List and document outstanding achievements in one or more of the categories listed under qualifications. **Verification** of these facts must be signed by the zoo director, curator, or immediate supervisor of the nominee.
3. The deadline for nominations is JUNE 1st of each year.

Selection Procedure: The Awards Committee, consisting of five keepers, will independently review each nominee.

The character of the award includes either a plaque or certificate, letter of notification to the institution's director and national recognition by professional journals. Such journals include: the American Zoo and Aquarium Association (AZA) and the Canadian Association of Zoos and Aquariums (CAZA) Newsletters, Animal Keepers' Forum (AAZK), Awards, Honors and Prizes: Volume 1; United States and Canada. The latter is published by Gale Research Company based in Wheaton, MD and found in medium to large sized libraries across the U.S. and Canada.

Award Nominations should be submitted to: Janet McCoy, Awards Chair, The Oregon Zoo, 4001 SW Canyon Road, Portland, OR 97221.

Elephant Ultrasound Workshop

Riddle's Elephant and Wildlife Sanctuary will be conducting the Eighth Elephant Ultrasound and Veterinary Procedures Workshop from Monday, 17 May through Thursday, 20 May, 2004. Spaces are very limited; advance registration is recommended.

Participants will learn evaluation techniques and the interpretation of ultrasound imaging, as well as semen collection in elephants. Hands-on breeding soundness and general health evaluations will be performed using the sanctuary's 13 elephants - male and female, African and Asian. Other topics covered during the workshop include foot care and radiographs, blood collections, and other medical treatments.

This course is taught by elephant veterinarian Dr. Dennis Schmitt, DVM, PhD, from Southwest Missouri State University (SMSU) in Springfield, MO (USA). Dr. Schmitt is one of the pioneers in the field of adapting modern ultrasound technology to better assess elephants for medical reasons.

The International Elephant Foundation will be offering a US\$1400.00 scholarship to one participant in the Elephant Ultrasound and Veterinary Procedures Workshop held in 2004. This will be a competitive process and require the submission of the applicant's resumé, a statement of interest and a statement indicating how this learning experience will be used to benefit elephant populations. The completed scholarship application must be **postmarked by 1 March, 2004** and sent to: Debbie Olson, International Elephant Foundation, P.O. Box 366, Azle, TX 76098-0366; or emailed to her at DOLson@indyzoo.com

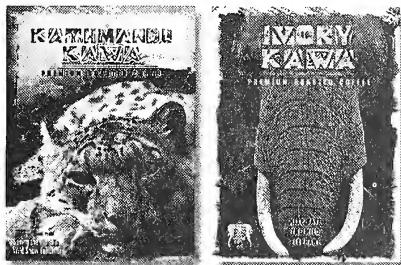
The Workshop registration fee of US\$1400.00 includes tuition, all meals and lodging at the Riddle's Elephant and Wildlife Sanctuary. For more information, or a registration packet, please contact Dr. Schmitt or the sanctuary office.

Dr. Dennis Schmitt
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Riddle's Elephant and Wildlife Sanctuary
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\$35.00	\$28.00	<u>Amazonia: The Land, the Wildlife, the River, the People</u> – Afonso Capelas Jr. – This book examines the diversity, grandeur and history of an astonishingly dynamic ecosystem. It also includes what is being done now and what can be done to save this huge reservoir of life. 160 pages, color photos, hardcover
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\$35.00	\$28.00	<u>Wild Cats of the World</u> – David Alderton – a fascinating insight into this exotic, enigmatic family, from the great cats of Africa and Asia to the cats of the Americas to the lesser known European species. Development, behavior, form and function, evolution, and distribution are covered. 192 pages, color photos, hardcover
\$17.95	\$14.36	<u>Volunteer Vacations: Short-Term Adventures That Will Benefit You and Others</u> – B. McMillon, D. Cutchins & A Geissinger. 8 th edition, 372 pages paperback

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Mail requests to: AAZK Beardsley Zoo Chapter, attn.: Linda Tomas, 1875 Noble Ave.,
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ltomas@beardsleyzoo.org



REACTIONS

A Question and Answer Forum for the Zoo Professional on Crisis Management

*By William K. Baker, Jr., Curator
Little Rock Zoo, Little Rock, AR*

Question

Can fatigue or stress play a part in compromising safety in the workplace?

Comments

I often considered this question in the course of my career. In a historical sense, there was always the adage of "a fair days wage for a full day of work" that I heard when I was growing up from my parents. And, in retrospect, I imagine that was true. But, I believe that both the work dynamic and for that matter, the daily complexities of our lives have changed.

It seems that our lives have become increasingly more complex in terms of demands on our time and perhaps that's a function of our society, when considering the sheer volume of available information and choices that we're bombarded with every day. In our electronic age of data and mercantilism, this certainly has to play a part in the increase of daily stressors. Longer hours and increasing responsibilities in the workplace can lead to increased stress on the home front as it competes against family and friends, often creating a viscous circle.

For many people, they wake up in the morning feeling more exhausted than rested and find themselves using phrases such as tension, job stress, burnout, and office politics. As the workforce shrinks, job related responsibilities increase, and stress is the predicted result, (Kansas State University). Early signs of stress in the workplace include headaches, irritability, low morale, and disrupted sleep, (NIOSH). It's also generally known that stress can lead to hypertension, cardiovascular disease, heart attacks, and other physical ailments. Psychological factors play into this as well, with an estimated 60% of work-related absences approaching a cost of over \$57 billion on a yearly basis, (American Psychological Association).

In the United States we call it Chronic Fatigue Syndrome (CFS), in other western countries it's called Immune Dysfunction Syndrome, and in Japan it's often called "Karoshi", or death from overwork. Symptoms include headaches, sore lymph nodes, weakness, muscle and joint pains, and inability to concentrate. These symptoms can mimic the flu, but can persist or recur for six months or more and often occur after a high-stress period or illness, (Lifetime, 2003).

According to the CFIDS Association (Weaver, 2003), women are diagnosed three times more frequently than men, and CFS strikes people between 30 and 50 years of age. But the good news is that the sooner that you are diagnosed, the sooner treatment can be implemented. the greatest chance for recovery appears to be when treatment is started within the first five years of the illness according to the Centers for Disease Control.

Sleep deprivation and sleep disorders have become a leading area of research. Dr. William C. Dement is the founder and head of the Stanford University Sleep Research Center and has probably done more than anyone else to raise awareness in this area of study. His position is that sleep is at least as important to our well-being as exercise and diet, and mismanagement of sleep could pose serious health risks.

His work indicates that an excessive loss of sleep or accumulation of a “sleep debt” contributes to a third of all accidents and has been proven to decrease personal productivity and an increase in a tendency towards anger. The good news is that a sleep deficit can be paid off in installments of 15 to 30 minutes a night. The key is knowing your sleep requirements and making a commitment to sleep smart, (Duka, 2001).

Some of Dr. Dement's observations include:

- Since work and other commitments can be inflexible, going to bed earlier is a good practice.
- As people grow older their nightly sleep needs can decline by 30 to 60 minutes.
- If excitement or activity keeps you going and you “power through” sleep periods, your behavior could have repercussions.
- Short naps won't lower a sleep debt, but it does rejuvenate you.
- Insomnia is usually not a specific illness, but often a symptom of other problems such as stress or physical ailments.
- Avoid caffeinated drinks in the evening and eating close to bedtime.
- Be sure your bedroom is quiet, dark, and not too warm.
- Exercise will improve the quality of sleep, but avoid it prior to bedtime.
- Develop a nightly bedtime time and routine to promote relaxation.

Two books are out that address these subjects, “Work to Live: The Guide to Getting a Life” by Joe Robinson and “The Promise of Sleep” by Dr. William C. Dement, M.D. and Christopher Vaughan.

My take on all of this is simple based on experience, if you are stressed, fatigued, or both, then you and your co-workers are at risk.

Next Month: My institution is considering buying new firearms for potential crisis situations. What is the current trend?

If you would like to submit a question for this column or have comments on previously published materials, please send them to AAZK, Inc., 3601 S.W. 29th St., Suite 133, Topeka, KS 66614 Attn: Reactions/AKF

(About the Author: Since 1985 Bill has been active in the fields of science, zoology, and wildlife management. His education and experience include a B.S. in wildlife management and post-graduate studies in zoology, Lab and Museum Assistant, Shoot Team Leader, ERT Member, Large Mammal Keeper, Senior Keeper, and Zoo Curator at various zoological facilities. His area of research is crisis management in zoological institutions, which draws upon practical experience and training as a Rescue Diver, Hunter Safety Instructor, NRA Firearms Instructor, and Red Cross CPR/First Aid Instructor.)

Knock Me Over With A Feather. . . .

submitted by Mary Jayne Churchill, Animal Naturalist

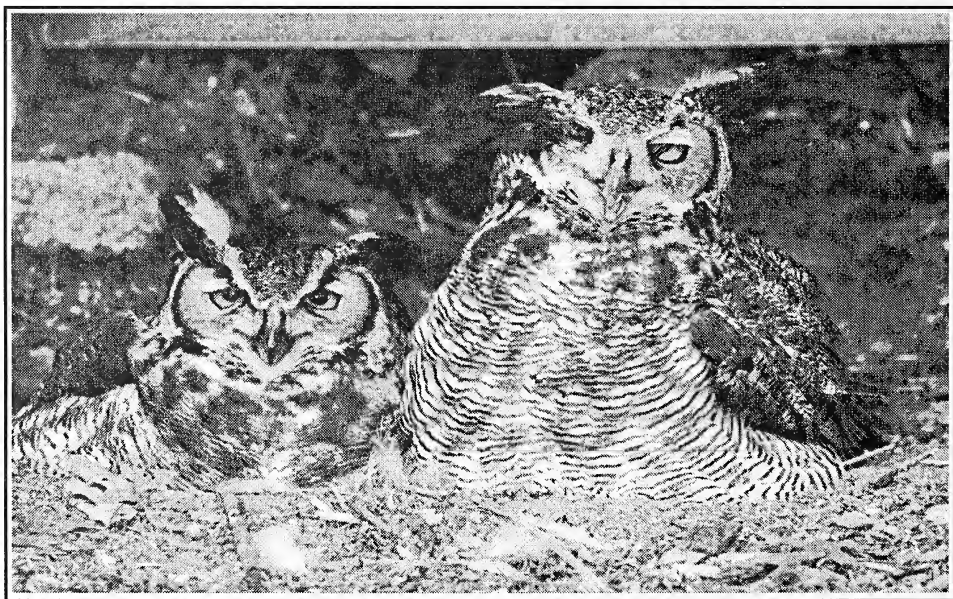
Primary Keeper Cats and Wolves

WNC Nature Center, Asheville, NC

Monday morning after the Christmas Holiday I was making my way to the Predator Habitat to begin my day's work and I went my usual route past the Birds of Prey Aviary. I survey the habitats for any leftovers from their meals the day before and check the birds for any mishaps that might have occurred overnight. The golden eagles, red-tailed hawks and vultures were all accounted for. As I approached our senior pair of great horned owls (*Bubo virginianus*); she being 17-years-old and he being 24, I could only locate the female. They both were always sitting up in the trees, but he was nowhere to be found. Suddenly I caught a glimpse of him huddled on the ground under their shelter house. I walked towards him to get a closer look. He fluffed his feathers and spread his wings and began weaving back and forth at me in a threatening posture, but stayed in the same place. I didn't see any obvious injuries. I entertained the idea that they may be nesting, but he had been at the Nature Center since 1982 and she since 1987, and they had never shown any interest of that type before, so I really felt that was doubtful. I decided to go and complete my work with the cats and wolves and come back in an hour or so to see if anything had changed.

After lunch I returned to see the owl sitting in the same place. I delivered a few supplies to the barn and asked the barn attendant to bring a broom and come assist me in making a diagnosis here. We entered the owl's habitat and I took the broom in one hand and crawled up beside the owl. I gently nudged him under his belly with the broom handle to encourage him to stand up and walk. He fluffed his feathers, clicked at me several times and stood up just enough to see, of all things, an egg. You could have knocked me over with a feather. After all these years they finally decided to nest. I quickly apologized for the intrusion and slowly backed away. As we were leaving the habitat I glanced up at the female sitting in the tree, she peered down at me, gave me a couple of winks and I replied, "you go girl".

I'd say congratulations are in order!



Both great horned owls (*Bubo virginianus*) on their nest, sharing the incubation duties.

(Photo: Franklin Lane)

2003 Marks Record Year for Panda Reproduction

A record 16 giant pandas (*Ailuropoda melanoleuca*) were born in captivity worldwide in 2003 according to Zhang Zhihe, head of China's panda breeding program. This includes twins born in Japan and a cub born at the San Diego Zoo. Both mothers are on loan to the Mexican and California facilities.

Threatened with extinction in the wild, captive breeding programs, including artificial insemination (AI) are seen as vital to saving the species. Only about 1,000 animals remain in the wild, feeding on bamboo in the Sichuan mountains of southwest China. About 140 giant pandas live in zoos and research centers worldwide.

A total of 29 pandas were inseminated naturally or artificially in the spring of 2003 with 19 births in the autumn of which two were stillborn and one failed to survive. This represents an 84% survival rate. Twelve cubs born in captivity in 2001 survived, and 10 in 2002. Female pandas are only able to conceive once a year and for only about two days. They give birth to one or two altricial cubs at a time. Sixty percent of male pandas in captivity shown little or no sexual desire while just a tenth of this number will mate naturally, making AI all the more important to this conservation effort.

A related story out of China reports that China has built a special biscuit factory to cater exclusively to its captive pandas. The factory produces bamboo shaped biscuits which have more fibre and vitamins than the traditionally fed steamed bread. Research is underway to determine what part nutrition plays in successful giant panda reproduction.

--Excerpted from Scotsman.com as reported in ZooNews Digest #s 271 and 272, December 2003

Zoo Keeper Safari

I will again be leading a trip to the Lewa Wildlife Conservancy in Kenya **January 4-17th & February 13-26th, 2005**. The dates have been moved to miss the Christmas rush! Total cost will be roughly \$3,200/person (depending on your city of departure). This includes round-trip airfare to Nairobi, Kenya, round-trip Air Kenya flights directly onto Lewa, transfer fees, 10 nights at the "Lewa Safari Camp" (luxury camping including showers/bathrooms within each tent - see www.lewa.org), all meals, game drives and hotel accommodations one night in Nairobi.

Drinks and tips (approx. \$50/person for entire stay) are not included.

Additional/optional trips:

- \$20 camel ride or horseback (great way to view game)
- \$200 Il Ngwesi overnight trip (sometimes this fee is waived for us)
- \$125 Taissia overnight trip (excellent community lodges which have won many tourist awards)
- \$66 Samburu day trip
- \$66 Sweetwaters (Jane Goodall's Chimp reserve) day trip/shopping

Rates are based on double occupancy (we can help you find a roommate).

Past trips have been so successful that we had to expand to more than one trip/year. The best part about this trip is that proceeds from the safari camp go directly into conservation at Lewa. What more could a keeper ask for? A fantastic safari while donating to conservation! As "friends of Lewa", we are given a special rate (almost half the normal rate)! Everyone needs this opportunity to see firsthand how "Bowling For Rhinos" funds are spent!

Please call Patty Pearthree at 919-678-0449 or email ppear3@aazk.org if interested. Space is limited to 13 people/trip. First priority will be given to zoo professionals and travel companions. Zoo volunteers/docents are also welcome if space is available.



Leather Elves Design Contest

Attention all AAZK members, it's time to put your thinking caps on. The AAZK Enrichment Committee and The Leather Elves are happy to be sponsoring the 2nd Annual Enrichment Device Design Contest. If you've got an idea for a device that's just taking up space in your brain or if you have built something that has worked particularly well with your animals, share it with the world. Entries will be judged on safety, innovation and affordability. Keep in mind The Leather Elves do not weld and they do not use materials such as sheet metal. The winning device will be named after you, built by The Leather Elves and a portion of the proceeds for each sale will go to the AAZK. Please send in a written description and a diagram or drawing of your idea (don't worry - you do not need to be a professional artist!!) to:

Robin Shewokis/ The Leather Elves
43 Mutton Lane
Weymouth, MA 02189

Entries must be received **by 31 May, 2004**. The winning design will be announced at the AAZK National Conference in Dallas, TX and in a subsequent issue of the *AKF*.

Great Ape Project Releases Census Book, Reveals 3,100 Captive Apes in U.S.

After two years of research, record-keeping and volunteer reports, the Great Ape Project today released the Great Ape Project Census: Recognition for the Uncounted, a book that stands as the first comprehensive tally of the captive chimpanzees, gorillas, orangutans and bonobos in the United States. The Great Ape Project Census reveals over 3,100 great apes living in captivity, ranging from modern zoos and sanctuaries to squalid carnivals and cruel laboratories. The Census reflects as much personal information as possible about each great ape, including name, age, sex, location and whether he or she was born in captivity or captured in the wild.

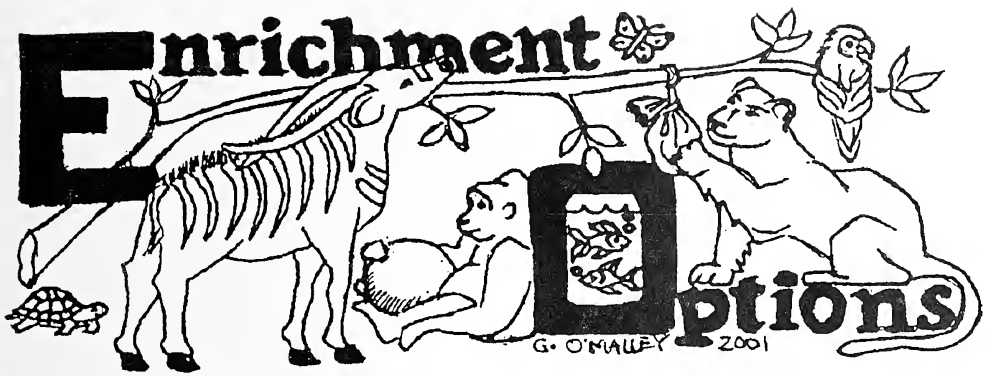
The Great Ape Project Census comes a decade after the publication of *The Great Ape Project*, the ground-breaking book that helped revolutionize mankind's consideration of great apes. The Great Ape Project Census includes photos and profiles of numerous great apes, along with essays by noted primatologists and experts such as Jane Goodall, Birute Galdikas, Marc Bekoff, Francine Patterson and Roger and Deborah Fouts. Great Ape Project president Peter Singer contributed the foreword.

"There has been a dramatic change in the thinking of many people about great apes," Singer wrote, "but this has yet to be adequately reflected in changes in the law, in the moral status we recognize them as having, and in the conditions in which they live. Perhaps this book will bring those changes a step closer."

The inspiration for the Great Ape Project Census came from the human census being conducted in the U.S. at the turn of the century. The Census had four basic goals: 1.) identify all great apes in the U.S.; 2.) report the conditions in which they live; 3.) increase public awareness; and 4.) identify sanctuaries that might be able to provide permanent refuge for those in need. The Census found great apes in 37 states - including several, such as Connecticut, where they were not previously known to exist - and a staggering 1,280 in biomedical research.

The Great Ape Project Census is priced at \$14.95 and available online at the Great Ape Project website (<http://www.greatapeproject.org>).

For more information, please contact:
Great Ape Project 1-503-222-5755
gap@greatapeproject.org



*EO Editors - Dawn Neptune, Utah's Hogle Zoo
and Rachel Cantrell, Disney's Animal Kingdom*

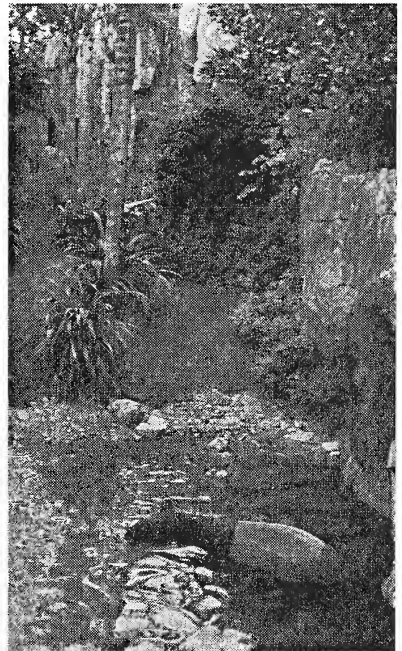
Malayan Tapir Enrichment at Disney's Animal Kingdom

By Angela Miller, Animal Keeper
Disney's Animal Kingdom, Lake Buena Vista, FL

The enrichment philosophy at Disney's Animal Kingdom (DAK) is based around seeing enrichment as a process, not an object or an event. The goals of this process are to promote species appropriate behaviors, and provide animals with some choices and control within their environment (AZA/BAG 1999). To help us through the enrichment process we follow an enrichment framework, which is made up of six components: Setting goals, Planning, Implementing, Documenting, Evaluating and Readjusting (Mellen & MacPhee 2001; Barber 2003). Since the first letters of these six components spell 'spider', our enrichment program is referred to as the SPIDER framework. Refer to www.animalenrichment.org for more information about the framework.

Setting Goals

An integral part of setting goals involves using knowledge about an animal's natural and individual history to generate ideas about species-appropriate behaviors that we would like to encourage. There were several natural history facts that we used to generate ideas about species-appropriate behaviors for the tapir. Tapirs are nocturnal herbivores that browse both in and out of water. Tapirs are solitary and primarily use scent to communicate and to explore their environment. Tapirs are excellent swimmers and can walk along a river bottom. Tapirs have very flexible, short trunks that are used to manipulate food (MacDonald, 2001). Information about an animal's individual history and current exhibit is also useful when setting goals. DAK currently exhibits 0.1 Malayan tapir (*Tapirus indicus*) alone with access to two inside stalls overnight and an exhibit during the day (See Figure 1). The exhibit consists of varying terrain, a variety of plants and trees, rockwork and a pool. Between 2000 and 2002, the tapir shared the exhibit with several different combinations of Reeve's muntjac (*Muntiacus reevesi reevesi*). Using this



Malayan tapir swimming in the pool

information, some of the behaviors we wanted to encourage included foraging, investigation of the environment, flehmen, object manipulation, self-grooming, rubbing and scent marking.

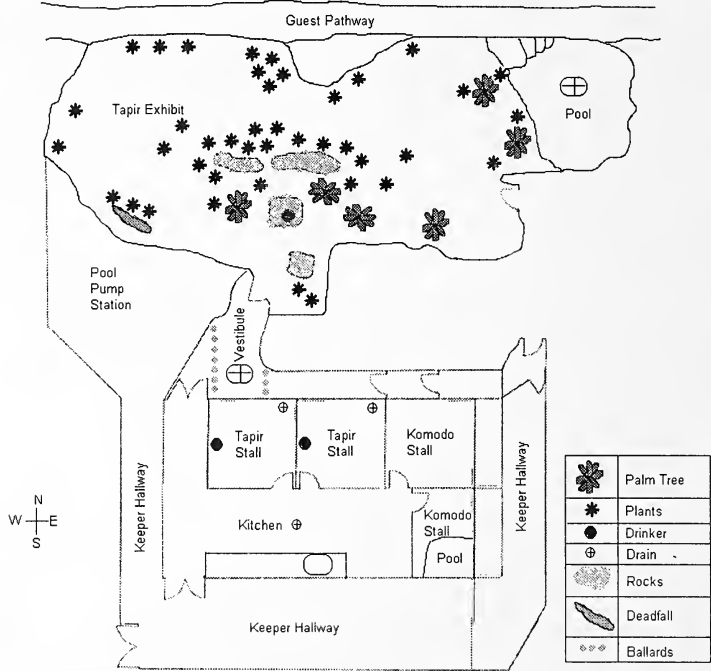


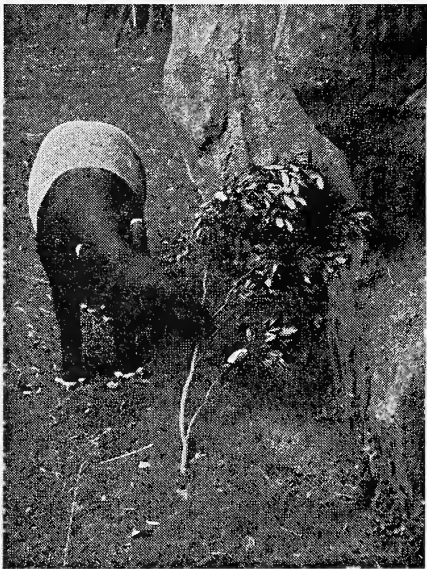
Figure 1. Tapir Building and Exhibit

Planning Enrichment

All of our enrichment goes through an approval process. Each enrichment initiative is reviewed to make sure that the initiative encourages species-appropriate behaviors, fits in with the theme of the area if it is to be provided on exhibit and is safe for use with the species. Each initiative is reviewed by a zoological manager who may then choose to have the area curator, behavioral husbandry team, veterinarian or nutritionist review the proposed initiative as well. After the initiative has been reviewed, it might be approved, approved with changes or not approved. Numerous initiatives were submitted to target the behaviors we wanted to encourage in the tapir.

Implementing Enrichment

The approved enrichment is put on a calendar so everyone is aware of what enrichment initiatives will be used for each day and to insure each initiative is provided an appropriate amount of times per month. The keepers refer to the calendar when setting up exhibits and holding areas each day. We have implemented the following approved initiatives for the Malayan tapir: Boomer Balls®, spools, browse, challenger ball puzzle feeders, deck brushes, food tosses, food hidden in hay or under browse piles, produce in ice blocks, produce in the water, produce trees, PVC puzzle feeders, scattered food, scents (extracts, spices and perfumes) and wood shavings as bedding.

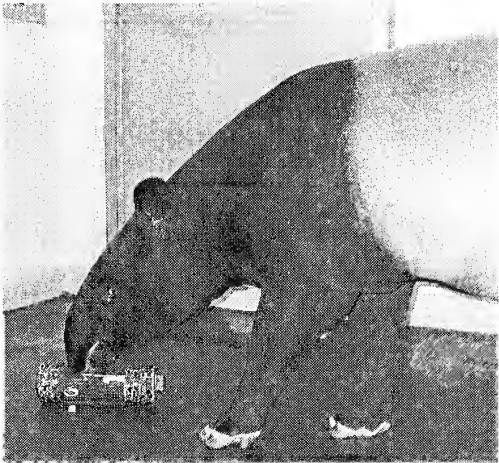


Malayan Tapir with Produce Tree

Documenting Enrichment

The enrichment initiatives used for the tapir were documented to determine if the initiatives met the behavioral goals that were intended and also to see how intensely the initiatives were utilized. One keeper observed each enrichment initiative over ten 15-minute sessions using the following methods.

Malayan Tapir with Puzzle Feeder (holding stall)



Behavioral Goals

The observer recorded the tapir’s reaction to the enrichment using a scan sampling at one-minute intervals for 15 minutes. Behavior was recorded using the following scale:

Table 1. Behavioral Goal Scale

Scale	Description of Interaction
0	No interaction
1	Actively avoids enrichment item
2	Interacts inappropriately (dangerously)
3	Interacts tentatively with item
4	Interacts appropriately but not with goal behaviors
5	Interacts appropriately with goal behaviors

Intensity of the Reaction

To determine how intensely the initiatives were utilized, the observer recorded intensity of the first interaction with the enrichment initiative during a 15-minute observation period using the following scale:

Table 2. Intensity Scale

Scale	Description of Interaction
0	No interaction
1	Accidental interaction with enrichment
2	In bodily contact with enrichment, but not active
3	Attempted to use, but prevented from doing so by conspecifics
4	Brief contact with enrichment with a high level of interaction with the enrichment occurring
5	Continuous interaction with a high level of interaction with the enrichment occurring

Evaluating Enrichment

The enrichment initiatives for the tapir were evaluated based on the data collected during the documenting phase. The evaluation provides for science-based information to make decisions about enrichment. The animal is not expected to interact with the enrichment for the entire time period, but we would expect to see appropriate interactions with the behavioral goals for at least part of the time. Some of the behaviors we do not want to see is actively avoiding the enrichment or interacting inappropriately or dangerously with the enrichment.

Many of the enrichment initiatives that were offered met the behavioral goals and with the appropriate intensity (See Table 3). (See Table 1. for a description of the behavioral goal scale and Table 2. for a description of the intensity scale.) These initiatives were deemed appropriate and will be offered in the same manner as during the documentation. The initiatives that met the goals include: browse, challenger ball puzzle feeders, food toss, hidden food in the hay and under the browse, produce in ice blocks, produce in the water, produce trees, PVC puzzle feeders, scattered food and scents.

Table 3. Behavioral Goal and Intensity Results

Scales	Behavioral Goal						Intensity					
	Percentage of Observations						Percentage of Observations					
	0	1	2	3	4	5	0	1	2	3	4	5
Browse	80	0	0	2	1.3	16.7	10	10	10	10	0	60
Challenger Ball Puzzle Feeder	80	0	0	0	0.7	19.3	10	0	0	0	20	70
Food Toss	21.3	0	0	0	1.3	77.3	10	0	0	0	0	90
Hidden Food in Hay	27	0	0	0	0	73	0	0	0	0	0	100
Hidden Food Under Browse	29.3	0	0	0	0	70.7	30	0	0	0	0	70
Produce in Ice Blocks	53.3	0	0	2	7.3	37.4	10	10	0	0	30	50
Produce in the Water	22.7	0	0	0	1.3	76	10	0	0	0	0	90
Produce Trees	37.3	0	0	0.7	6.7	55.3	10	0	0	0	0	90
PVC Puzzle Feeder	47.3	0	0	0	3.4	49.3	10	0	0	0	0	90
Scattered Food	24	0	0	3	0	73	0	0	0	0	0	100
Scents	56.7	0	0	0.6	0	42.7	10	0	0	0	10	80

A few enrichment initiatives were not as effective at meeting the behavioral goals and/or intensity (See Figures 2 and 3). These included: Boomer Balls®, spools and wood shavings as bedding.

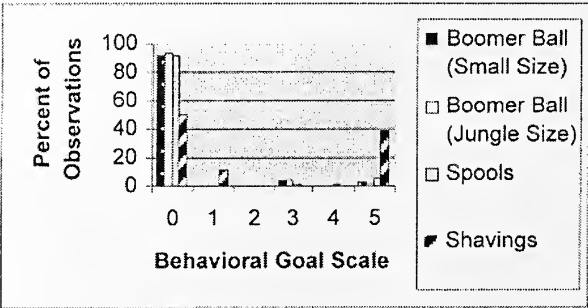


Figure 2. Behavioral Goal Graph

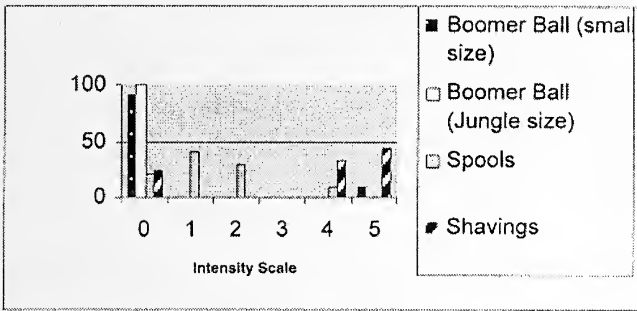
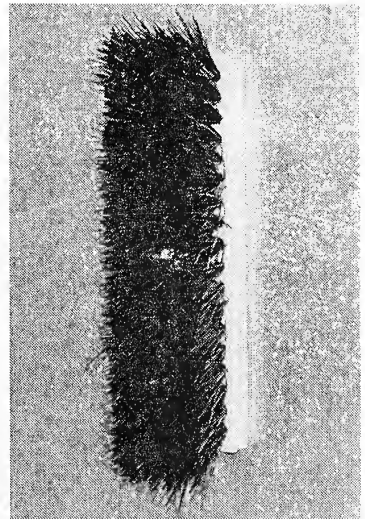


Figure 3. Intensity Graph

Some enrichment initiatives are more appropriately measured indirectly due to the type of enrichment and behavioral goals. One of these items for the tapir was a deck brush. The behavioral goal for providing a deck brush is the opportunity for self-grooming. The deck brush was sprinkled with unscented talcum powder at night before the tapir entered the holding stalls. The next morning, the deck brush was checked to see if the talcum powder had been disturbed. On several occasions, the deck brush was used, but the talcum powder did not appear to be disturbed. Hair on the brush and direct observation of interaction was also used to determine interaction. The deck brush was then rated a 0 for no interaction or a 1 for appropriate interaction. We also had a category for an inappropriate interaction, but this did not occur. The tapir did utilize the deck brush for self-grooming 60% of the time it was evaluated. Since the deck brush was effective in meeting the behavioral goals, it will continue to be offered.



Deck Brush

Re-adjustment of Enrichment

The evaluation process can identify challenges, areas of opportunity or changes in duration or frequency of providing the enrichment initiative to make the enrichment more effective. After evaluating the data collected, several enrichment initiatives were re-adjusted to better meet the behavioral goals of the enrichment. Boomer Balls® and spools scored fairly low on meeting behavioral goals and intensity level. We are in the process of offering these items in a different manner, hanging from the ceiling as opposed to on the floor, to see if the interaction levels are different. Wood shavings as bedding also had mixed scores. The tapir occasionally avoided the shavings but sometimes used the shavings as bedding. In order to accommodate either reaction, the shavings are now offered less frequently and in conjunction with a hay bed in separate stalls. By offering two choices of bedding, the tapir then has control of her environment and can choose which type of bedding she will use.

Conclusion

Using the SPIDER framework for tapir enrichment has been very useful. The “SPI” part of the framework provides a great process for providing appropriate enrichment that encourages species-appropriate behavioral goals. The “DER” part of the framework provided the team with data allowing us to evaluate each enrichment initiative. While this task seemed daunting at first, once keepers starting observing the tapir’s reaction to the enrichment, the time spent watching was worthwhile. We now have scientific data to determine if the enrichment we are providing is effectively accomplishing the behavioral goals we have set. If the enrichment is not promoting the behaviors we want to see expressed, it can easily be readjusted so that it is more effective.

Acknowledgements

A special thanks to all of the keepers: Angela Cecil Binney, Kristy Jerry, Lois Johannes, Maureen Leatherberry, Becca McRae and Jennifer Metzler, for collecting enrichment assessments. Dr. Joseph Barber, Research Fellow, was invaluable in assisting the team with the best documentation and evaluation tools for this project.

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(Ideas appearing in this column have not necessarily been tested by the editors for safety considerations. Always think ahead and use good judgement when trying new ideas. You are invited to submit materials for the Enrichment Options Column. This might include recipes, toys, puzzle feeders, olfactory enrichment ideas, etc. Drawings and photos of enrichment are encouraged. Send to: AKF/Enrichment, 3601 S.W. 29th St., Suite 133, Topeka, KS 66614-2054. Eds.)

Enrichment Excellence - Let Someone Shine!

Has someone inspired you through their dedication to enrichment for captive wildlife? Has a keeper **you** know, developed an activity for a species in their care that has brought forth breathtaking natural behavior? Do you know a keeper who has spearheaded a **dynamic** program that helped their department move forward with sustainable, accountable, zoo-wide enrichment? Do you know a keeper who took time to create a successful enrichment event involving their community? If reading this brings someone to mind, you can let that individual and their colleagues know just how much their hard work is appreciated through the **Enrichment Excellence Award**, brought to you by the *AZK Awards and Enrichment Committees*. Official criteria for nomination are in this issue of the *AKF*, with a deadline for nominations being June 1st. Start thinking now of the **special keeper** that you think may be an *Enrichment Hero!*

Recovery from Spinal Trauma in a Juvenile Allen's Swamp Monkey

(*Allenopithecus nigroviridis*)

By

Bonnie Jacobs, Lead Keeper, Primate House

Anita Yantz, Keeper, Primate House

Claude Lacasse, DVM

Lincoln Park Zoo, Chicago, IL

Allen's swamp monkeys (*Allenopithecus nigroviridis*) are found in western Zaire and northeast Congo living in groups of up to forty individuals with a multi-male, multi-female social structure. They frequent swampy areas and spend considerable time foraging on the ground and in the water. They are a CITES Appendix II listed species indicating a moderate level of threat to the wild population. The small (15.18) U.S. population is managed under AZA's Guenon SSP. Lincoln Park Zoo is one of only seven institutions to house them, and 2.2 offspring have been produced here in accordance with master plan recommendations.

Late one afternoon, visitors notified Primate House keepers that an Allen's swamp monkey was lying in the exhibit pool. A juvenile male, born 13 August 2001, was found partially submerged in the untempered water. Although quickly retrieved, he was unresponsive with dilated, fixed pupils, and profoundly hypothermic. Chest compressions were immediately begun while veterinary staff was summoned. When the Director of Veterinary Services arrived, no palpable pulse or cardiac impulse was present, mucous membranes were very pale, and breathing was not obvious. Intubation was performed and rescue breathing initiated. Within one minute of intubation, spontaneous breathing occurred and a weak cardiac pulse was detected. During the first 20 minutes, breathing was intermittent; so rescue breathing was continued. Re-warming efforts included hot water bottles, hair dryers, warm subcutaneous fluid, and massage. Dextrose 50% and Solu-Delta-Cortef (steroids) were administered. After 30 minutes, the corneal reflex returned and the monkey began blinking and moving his head but had minimal arm or leg movement. Once chewing on the endotracheal tube was noted, it was removed and spontaneous breathing remained. An additional 20 minutes of re-warming efforts were necessary before a temperature of 92°F (33.3°C) was detected. A blood sample was collected at that time and did not reveal any abnormality. The monkey was placed in an incubator and monitored by the night keeper hourly.

The following morning the monkey was alert, sitting up and accepted hand-fed orange and grapes. Neurological deficits were obvious. He was placed in a larger cage (48"L x 24"W x 60"H; sitting on a base 15" off the ground), bedded with a foam pad and towels. This cage was put within a larger holding adjacent to the troop's enclosure. The monkey was unable to properly use his hands, tail or lower legs. Pinching digits did not elicit an obvious pain response. Steroids with antibiotics and rest were recommended until consultation with a veterinary neurologist could be arranged. The animal was hand-fed and kept hydrated throughout the day. Late in the afternoon he moved across the cage from keeper to keeper and had regained total use of his right leg.

Three days following the injury, the monkey was taken to a veterinary neurologist, member of Lincoln Park Zoo's Medical Advisory Committee, for an evaluation. An MRI showed a small blood clot within the base of the spinal cord, which was most likely trauma induced from a fall (Figure 1). A soft collar was placed around the animal's neck to promote stability (Figure 2). The neurologist's suggestions were to wean off the steroids and offer opportunities for manual manipulation as well as physical therapy.

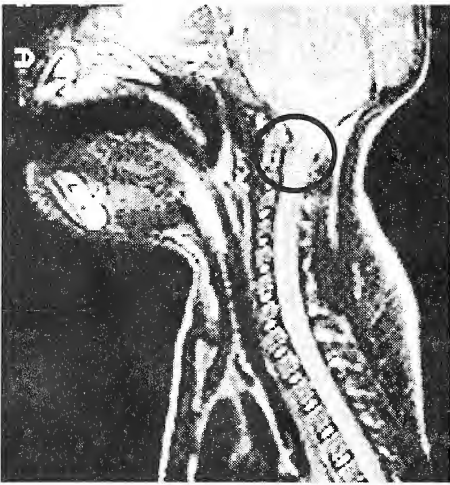


Figure 1: Contrast MRI in Allen's SM



Figure 2: Soft collar.

By the following day the monkey had regained proper use of the tail and left leg to the ankle, but both hands were curled in an abnormal position (supinated) (Figure 3). Due to hand position and the dragging left foot, abrasions occurred, which were treated with antibiotics, betadine gel, and covered with bandages as needed.



Figure 3: Supinated hands.

The monkey had numerous socialization opportunities with keepers due to time spent hand feeding him throughout the day. His environment was enriched with infant toys, a mirror, and various crib activity centers to attract his attention and desire to manipulate.

Nine days following injury, the fingers of the right hand began to flex slightly and the monkey was able to pick up food items using his knuckles. Four days later, daytime access was given to the straw-bedded larger holding area where activity increased.

Primate House staff then began entering the holding area to hand feed and desensitize the animal to physical contact with keepers, which was readily achieved. Physical therapy and massage were an easy transition, which became eagerly anticipated by both monkey and keepers. Wrists and ankles were extended and flexed gently while the digits were manipulated to mimic natural movements.

Twenty-two days post trauma, the right hand regained grasping ability and the collar was removed from the animal's neck. Eleven days later, the monkey began to locomote with proper alignment of the left hand, as well as continued improvement of finger usage with the right hand. Slowly, the monkey began to feed himself and was encouraged to use fingers by placing food inside a container with multiple small openings (Figure 4).

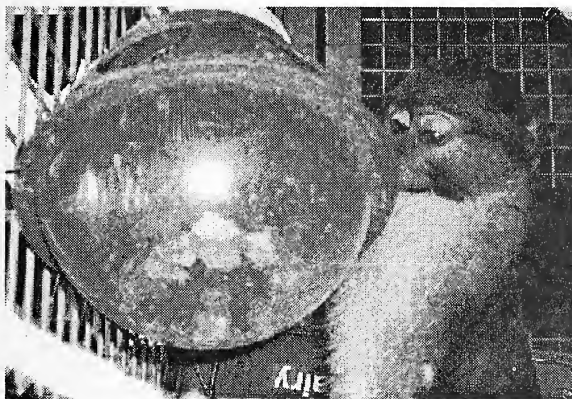


Figure 4: Retrieving food from activity ball.

At this point in time, daily improvement slowed significantly and long-term prognosis was uncertain. A plateau had been reached. However, special care and physical therapy were continued in hope of complete recovery.

By six weeks the monkey was able to move throughout the larger holding, even managing to climb up the mesh to access shelves and branches. Right hand usage was virtually normal, but left hand improvement was considerably slower and only returned to normal weeks later. Although physical therapy was ongoing, his interest in interacting with staff waned.

Forty-seven days post trauma an older female sibling (born 11 September 2000), was introduced to his enclosure. When access to a second holding was given three days later, the injured animal continued to display excellent improvement. The remainder of the troop (sire, dam, and two-week-old male sibling) joined the pair in holding seven days later. The reintroduction was without incident and the reunited troop was returned to exhibit the following day.

Acknowledgements:

We can only hope this juvenile Allen's swamp monkey will henceforth proceed in a more cautious manner but as that is most unlikely we are very thankful to have such excellent veterinary staff with the resource of a large medical advisory committee including Michael Podell, MSc, DVM, DACVIM (Neurology). We would like to thank Kathryn Gamble, DVM, MS, DACZM, Curator John Gramieri, veterinary technician Joel Pond, animal keepers Kris Florig, Pam Jackson and Amy Rahut, and of course the Primate Department: Art Diaz, Eric Meyers, Area Supervisor Andy Henderson and Curator Lori Perkins.

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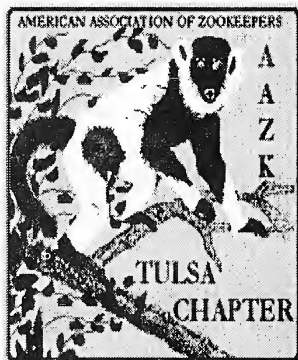
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Chapter News Notes

Tulsa Chapter AAZK

We had our officer elections at the end of the year wrap-up meeting held at one of our favorite Zoo Keeper watering holes. As always this past year was exciting and very successful. The newly elected officers for 2004 are:

President..... Pam Bingham
Vice President..... Mo O'leary
Treasurer..... Mike Connolly
Secretary..... Susan Russell
Liaison..... Ric Kotarsky



Thanks to the past officers of 2003 for their endless hours of commitment to our Chapter. Our success as a team came from your hard work and dedication!

Last year we created our first ever Chapter web page and this year we are going to bring back into print our Chapter's very own newsletter. It will be a quarterly publication called *Critter Chronicles* and will be available to read at tulsaazk.org in April.

The original newsletter was created back in 1979 and was in and out of circulation through 1984. The 2004 version will feature articles written by current keepers, docents, and curators. There will also be a section featuring some of the old articles written from keepers who submitted great stories worth reprinting from the 70's and 80's.

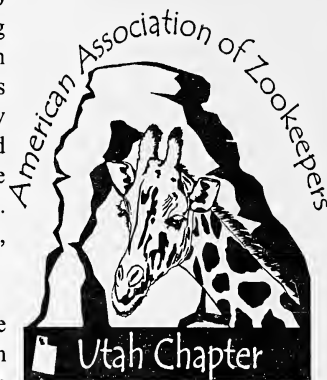
---Ric Kotarsky, Liaison

Utah Chapter AAZK

As another busy and successful year came to a close for our Chapter, I would like to share our news for the past year.

Early in the year we collected over \$1000 which was sent to Tidbindilla Nature Reserve in Australia to help them recover from the devastating fire that swept through their facility.

Our Bowling for Rhinos event was our best ever with over 100 bowlers raising \$11,500. Jason Peterson was our top money raiser and second in the nation. Congratulations, Jason!



In September we held our 7th Annual Cheetah Cha-Cha event. Visitors were entertained by local performing artists, played games, and purchased cheetah merchandise to help raise \$1100 for the Cheetah Conservation Fund in Kenya.

We were then able to divide up the remaining money from various fundraisers to send to a variety of organizations. Raptor Inventory Nest Survey (RINS) was sent \$500 for the Dr. Dawn Sebesta Memorial Fund. Dr. Sebesta was a docent tragically lost in a plane crash this summer. The Hogle Zoo Library Book Inventory Fund received \$250. We sent \$750 to the Wildlands Project general fund and \$750 to the Yellowstone Grizzly Foundation. The Ethiopian Wolf Conservation Programme, Lewa Education Trust and Adopt-A-School Program, and the Northwestern Namibia Desert-Dwelling Elephant and Giraffe Project each were sent \$500. Lastly, the Amazon Conservation Team received \$250.

Finally, I would like to thank our 2003 officers for a great job and announce our new officers for 2004:

President.....Amy Seegmiller
Vice President.....Erin Jones
Secretary.....Stephanie Natt
Treasurer.....Amanda Ista
Liaison.....Julee Barrett

--Elizabeth Torstveit, 2003 Liaison

Philadelphia AAZK Chapter

New officers for 2004 are:

President.....Dawn Madzarac
Vice-president.....Ken Pelletier
Secretary..... Amy Ivins
Treasurer..... Linda Cairnes
Liaison.....Catherine Vine

The Philadelphia Chapter of AAZK would like to welcome our newest members, the Elmwood Park Zoo in Norristown, PA and the Academy of Natural Sciences in Philadelphia, PA. We're excited to be expanding our Chapter to include neighboring institutions, and we're looking forward to sharing ideas and resources. As a result of our recent additions, our chapter voted to change our name to the Greater Philadelphia Chapter of AAZK.

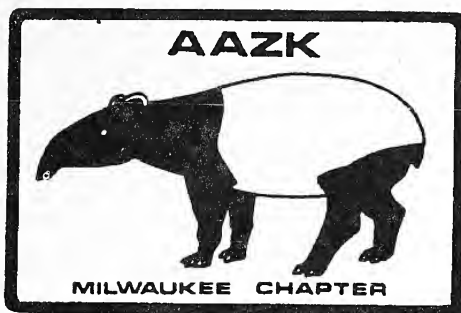


A M E R I C A N
A S S O C I A T I O N
O F Z O O K E E P E R S
P H I L A D E L P H I A C H A P T E R

Our Chapter had an exciting end to 2003. We participated in a food drive sponsored by a local radio station. AAZK collected 1,418 pounds of food, which was donated to the Philadelphia Food Bank. This more than doubled the amount collected last year, and we're hoping for an even more successful food drive in 2004!

--Catherine Vine, Liaison
Greater Philadelphia Chapter

What's your AAZK Chapter been up to? Send your Chapter News to the Editor at:
akfeditor@zk.kscoxmail.com



AAZK Milwaukee Chapter

The last half of the 2003 year has also been busy for us. By the reckoning of our president, it has also turned out to be one of our most successful fundraising efforts in the last several years! We again had elections for new officers. This year's results are:

President.....Karen Rabideaux
Vice President..... Joan Volpè
Treasurer.....Dawn Fleuchaus
Secretary.....Mike Frayer
Liaison.....Earl Conteh-Morgan

We finished off the 2003 fundraising efforts with a bang. In October, our Halloween caramel apple sales raked in \$386.00, which will be donated to the AAZK National Endowment Fund. The popular but work- intensive annual spaghetti dinner with silent auction was revamped into a pizza party, as variety is the spice of fundraisers. The pizza was provided by a local vendor. It was a nice change of pace for us and for those who normally attend the spaghetti dinner. Our earnings totaled \$935.00, so more \$\$\$ for less work! The silent auction was maintained, and quite a few handmade items from our zoo staff and volunteer corps were featured.

--Liaison - Earl Conteh-Morgan



**Chapter Recharter
Packet
Deadline is
1 March 2004**



Book Review

Exotic Animal Medicine for the Veterinary Technician

Edited by Bonnie Ballard, D.V.M. and Ryan Cheek, R.V.T.

Iowa State Press, 2121 State Avenue, Ames, Iowa 50014

ISBN 0-8138-1928-8 November 2003

Paperback 379 pgs. \$49.99

*Review by Marilyn Timberlake
Veterinary Technician
Western Hills Veterinary Hospital
Topeka, KS 66604*

Exotic Animal Medicine for the Veterinary Technician is a handbook written to introduce technicians to the exotic animals they may see in practice. It is edited by Dr. Bonnie Ballard and by Ryan Cheek. Dr. Ballard has worked in veterinary medicine since 1974. She practices at Winder Animal Hospital in Winder, Georgia. Ryan Cheek teaches part-time at Gwinnett Technical College and also works as a lab assistant. There are 14 other contributing authors.

Chapter 1 – Introduces the book, explaining the role of the technician and who would most benefit from the information included.

Chapters 2 through 12 are: The Avian Patient, The Lizard, The Snakes, The Chelonians, The Amphibians, The Ferret, The Rabbit, The Mouse, Rat, Gerbil and Hamster, The Chinchilla, The Guinea Pig, and The Hedgehog. Each chapter includes anatomy and physiology, husbandry, nutrition, common diseases or disorders, parasitology, radiology, behavior, anesthesia, surgery techniques, restraint, euthanasia and much more for each species.

Chapter 13 includes other species: The Skunk, Prairie Dogs and Sugar Gliders.

Chapter 14 is The Role of the Veterinary Technician in Wildlife Rehabilitation.

Chapter 15 is Avian and Reptile Hematology.

There are also 12 Appendices including additional information on State/Federal Wildlife Permit Offices, Wildlife forms, identification of hatchling and nestling songbirds, average body weights, Species Care Sheets, supplies necessary for an exotic practice, etc.

Having worked in the past as a zoo keeper at the Topeka Zoological Park for 13 years, and having had experience with most of the animals described in this book, I found the information to be a good refresher course. I am currently working in a small animal practice specializing in dogs and cats, but we hope to add exotics to our practice in the future.

I found this book to be filled with helpful information, whether it is tube feeding a parrot or drawing blood on an iguana. The text, illustrations, and pictures are clear and concise. Each section deals with the individual needs of that particular species in a detailed and complete manner. I particularly liked the information on restraint, radiology and venipuncture on each species. To quote a phrase in the preface “Because the field of exotic animal medicine is a dynamic one, new knowledge is constantly emerging about many of the species kept as pets and new information can in some cases contradict what was thought to be true before. For many species, exotic animal medicine could be said to be in its infancy. For this reason it is essential that those interested in exotics keep up with the latest information.” I would recommend this book to anyone who wants to keep up with the latest information on exotics.

Veterinary Nursing of Exotic Pets

By Simon Girling

© 2003 ISBN 1-4051-0747-2

Blackwell Publishing Ltd., 350 Main St., Malden, MA 02148-5018

(781) 388 8250 www.blackwellpublishing.com

Pgs. 320 Paperback \$47.99

*Review by Jenny McLaughlin, Veterinary Technician
Connecticut's Beardsley Zoo, Bridgeport, CT*

This is a well organized, logically formatted book that can be very informative. It contains a moderate number of helpful pictures, diagrams, figures, and tables. It is "aimed at the veterinary nurse, technician, and the veterinary student alike".

There are a few regional differences in spelling: such as hematology being spelled haematology, fibre for fiber, etc.

There also are some differences in recommended dosages for specific medications, and for specific foods that vary from other medical texts I have read. This is not a quality appraisal or defect of the book, just an observation. I find that this frequently occurs between books containing that kind of very detailed information and the varying experiences/sources of the individuals writing the books.

The book is divided into three main categories:

Avian, Reptiles and Amphibians, and Small Mammals.

Each of the previous sections is further divided into six sections:

Basic Anatomy/Physiology

Housing/Husbandry

Handling/Chemical Restraint

Nutrition

Common Diseases

and Overview of Therapeutics

I found the wide range of species covered in the book helpful. For example, under the avian category: Psittaciformes, Passeriformes, Raptors, Columbiformes, and Anseriformes were covered. Reptiles and Amphibians included discussions on lizards, Serpents, Chelonians, and Crocodylians. Small Mammals included domestic rabbits, rats/mice, gerbils/hamsters, guinea pig/chinchilla/degu, chipmunks, and domestic ferrets.

Nutritional sections gave not only general and specific needs, but also intolerances and results of too little/too much of the minerals/vitamin requirements.

The common disease section went thru a variety of ecto- and endoparasites, viral, bacteria, and miscellaneous causes. Following this information is further subdivision by body system diseases: digestive, respiratory, circulatory, urinary, reproductive, muscoskeletal, and neurological.

All the sections were clearly written and understandable. If you are a general animal care provider and interested in learning more of the scientific background and medical care aspects of exotic animals, this may be a good book for you. It also has merit as a good overall review of the many classes/study areas in veterinary technician school that lacked focus on exotic animals. I also think this book would be good to have around for periodic review.

Raising Captive Whooping Cranes for the Recovery Program: An Analysis of Egg Management and Chick Rearing at the Devonian Wildlife Conservation Centre

*By Lindsay E. Mickelson
Calgary Zoo – Devonian Wildlife Conservation Centre
Calgary, Alberta, Canada*

Abstract

Captive breeding plays a vital role in the recovery and preservation of endangered species. The whooping crane (*Grus americana*) is the rarest of the world's 15 crane species and is classified as endangered under the IUCN Red List criteria (Mirande *et al.*, 1992). The Nat Christie Breeding Facility at the Calgary Zoo's Devonian Wildlife Conservation Centre (DWCC) is the only partnership in Canada that is managing a flock of breeding whooping cranes. Chicks that are raised at the Centre are released to the wild as part of the recovery project. The purpose of this paper is to describe methods being utilized at the DWCC to successfully produce fertile eggs and raise whooping crane chicks to fledging. A brief history of the Centre will be given and future goals and objectives of the breeding facility will be discussed.

Introduction

The whooping crane (*Grus americana*) is a recognized symbol of the recovery efforts and wildlife conservation for endangered species. The world population reached a low of 15 or 16 birds in 1940 - 41 (Lewis, 1991). Captive breeding programs have been established as a last resort to save endangered species such as the whooping crane. According to Ellis *et al.* (1996) "captive propagation has become increasingly important and provides security against extinction of the species while affording opportunities to initiate new populations". In 1966, development of a captive flock began at Patuxent Wildlife Research Centre (Lewis, 1991). There are several breeding facilities in the United States and one in Canada at the Calgary Zoo's Devonian Wildlife Conservation Centre (DWCC). The Nat Christie Whooping Crane Breeding Facility at the DWCC was established in 1996 and is located 35 kilometers south of Calgary, Alberta, Canada. Facilities here include: 20 crane enclosures equipped with flight netting, individual ponds, and winterized shelters; an incubation room, a chick rearing building, and an exercise yard for costume-reared chicks. Four pairs of sandhill cranes (*Grus canadensis*) are utilized for natural egg incubation and also produce "foster" sandhill chicks for inexperienced whooping crane pairs. There are currently 17 whooping cranes in the breeding program at the Calgary Zoo, this includes eight established pairs and a single male used as a role model bird for proper imprinting of chicks.

Breeding Season and Egg Management

Breeding behaviour can be observed as early as mid-February. Mating commonly starts in March and continues through until April or May (Wenman, 2003). Artificial insemination (AI) is a recent addition to the DWCC's breeding program and was performed on one pair of whooping cranes in 2003. Staff were trained in proper AI techniques and applied them to sandhill cranes before trying procedures with the whooping cranes (Knapik, 2003). Whooping cranes are indeterminate egg layers and are capable of laying multiple clutches if the eggs are removed from the nest. There are two methods for removing the eggs from the nests: single egg removal where eggs are removed as they are laid, and complete clutch removal where both eggs are removed after a two egg clutch is complete (Ellis *et al.*, 1996). Both methods are employed depending on the history and behaviour of the individual pairs. After eggs are removed, they are put in an incubator and are monitored daily. The incubation period lasts an average of 28 days (Ellis *et al.*, 1996). Eggs are weighed twice a week to monitor weight loss, and are candled to determine fertility. Some whooping crane eggs are relocated under a sandhill pair to be naturally incubated and are then transferred to an incubator a few days before hatching.

Parental Rearing Method

Some inexperienced whooping crane pairs are given “foster” sandhill eggs to incubate. This gives the pair incubating experience and, if the chick hatches out, some crucial parenting experience to help strengthen the pair bond. If one or both mates have little or no parental experience, a sandhill egg can replace an original egg from the pair. This allows novice parents to gain some experience, without having the risk of losing an endangered species to egg breakage, infanticide, or neglect. An example from this year’s breeding season involves an inexperienced pair named “Ish” and “Christie”. They have never laid fertile eggs together, shown any previous incubating behaviour, or attempted to raise a foster sandhill crane. In 2003, a wooden “dummy” egg was placed in Ish and Christie’s enclosure. Both birds started to incubate the “dummy” egg and show aggressive nest guarding behaviour (Knapik, 2003). Behavioural observations of the pair were carried out to assess their parenting ability. A blind was placed 100 feet from the enclosure and was equipped with a spotting scope and binoculars for observation. On 4 June, 2003, the foster chick successfully pipped out and both parents were very attentive to the nest and the newly hatched young. Both parents were seen offering earthworms and other insects during foraging. They were protective of the chick and displayed aggression to anyone that got too close. Unfortunately, the sandhill chick died from an infection when it was three weeks old. However, the experience of raising a chick will benefit the future breeding potential of “Ish” and “Christie”.

When an adult whooping crane pair has sufficient parenting experience, they are allowed to raise a chick from a fertile egg in their final clutch of the season. Parent-reared chicks are less susceptible to toe and leg problems because they get sufficient exercise during the day. Food and water dishes are supplied and are accessible to both parents and chick. This year at the DWCC, our most successful breeding pair, “Hope” and “Chinook”, raised their own chick, which will be sent to Florida for the release program (Knapik, 2003). Cranes that are reared by their own species are imprinted properly and make good candidates for release programs (Ellis *et al*, 1996).

Costume Rearing Method

Parent-reared chicks are managed very differently than costume-reared chicks (Ellis *et al*, 1996). Hand-raising whooping crane chicks by costume and puppets is a necessary alternative to parent rearing. As eggs approach the estimated pip date, movement can be seen in response to brooding calls, and eggs are then transferred to a hatcher. After hatching, the chicks are moved to a brooder box in the chick rearing building. The brooder box is equipped with a heat lamp, food, water, and a hand puppet that is used to encourage the chick to eat and drink. The chicks are closely monitored during the first few days after hatching and detailed records are kept. A white knee-length tunic and masked hood are worn to disguise the human form. This costume is worn and recorded brooder calls are played whenever contact with the chick is made. Chicks will quickly imprint on the costume and brood calls and will follow closely during exercise, foraging, and socialization sessions. The costume is not worn during any “stressful” activities such as medical treatments and veterinarian check-ups.



Costume rearing of whooping crane chicks at the DWCC.

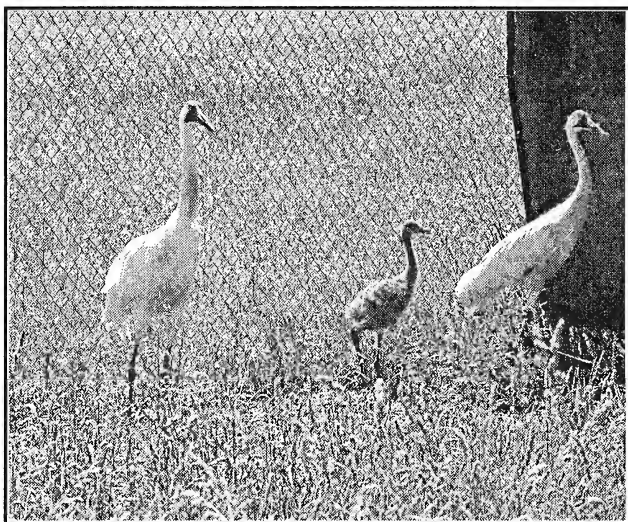
(Photo: Rick Wenman)

Exercise is a crucial component to rearing a healthy chick. In the wild, crane chicks spend most of the day following their parents around searching for food (Ellis *et al*, 1996). Toe and leg problems

can be a concern for costume-reared chicks, so they need to be exercised daily (Knapik, 2003). The exercise yard contains a concrete water pool and a naturalized pond where the chicks can forage with the costumed "parents". The natural pond in the exercise yard is stocked with freshwater invertebrates from a nearby pond. This provides the chicks with live food stimuli and helps them to learn foraging behaviour in a wetland setting. A live conspecific role model bird named "Spree" is housed next to the exercise yard. This allows the chicks to imprint (both visually and vocally) on a live role model bird. The main goal of costume rearing is to imprint the chicks on a crane-like substitute so they can learn to associate with other whooping cranes in the future (Rabin, 2003).

Future goals for the DWCC

Captive breeding programs protect the development of behaviourally and genetically viable, self-sustaining populations. This shields the species from extinction and ensures that birds released represent the original wild forms (Mirande, 1987). The Devonian Wildlife Conservation Centre



Whooping crane pair 'Hope' and 'Chinook' parent rearing their own chick. (Photo: Lindsay Mickelson)

and Nat Christie Whooping Crane Breeding Facility is a valuable contributor to the whooping crane recovery project. Future goals include performing artificial insemination on several pairs to increase number of fertile eggs, apprentice training at other centres to strengthen teamwork, improvement of pond design and size of enclosures, and building an experienced volunteer base to help exercise costume-reared chicks. Further plans could also include continued behavioural observations of first-time "foster" parents, and research of possible methods to generate breeding activity in non-producing pairs. Since 1996, there have been 14 chicks released, all from a single pair of whooping cranes, "Hope" and "Chinook". The goals listed

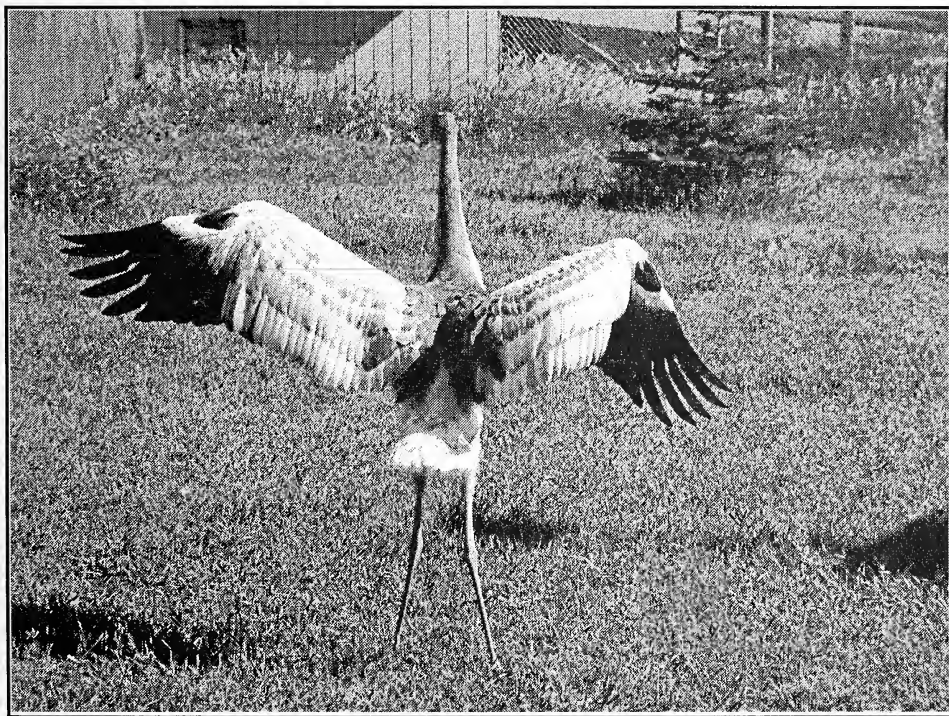
may help to produce more offspring from other pairs that will be valuable to the wild and captive population.

Acknowledgements

I would like to thank Bob Peel (Curator, Canadian Wilds, Calgary Zoo) for the opportunity to take part in the first formal internship at the Devonian Wildlife Conservation Centre. The internship provided me with invaluable hands-on experience and helped further my understanding of captive breeding and endangered species conservation. I would also like to thank Journeyman Zookeepers Dwight Knapik and Rick Wenman, and Apprentice Zookeeper Cathy Robinson for accommodating my research needs and behavioural observations, and for helpful guidance throughout my internship. Dr. Sandie Black, Dr. Doug Whiteside, and Dr. Todd Shury provided answers to many of my veterinary questions.

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**Costume-reared Whooper chick 'Hercules' at the Calgary Zoo's
Devonian Wildlife Conservation Centre**
(Photo: Lindsay Mickelson)

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Legislative Update

Compiled by Georgann Johnston
Legislative Advisor
Sacramento, CA



Bush Signs Captive Wildlife Safety Act

President Bush has signed into law the Captive Wildlife Safety Act which prohibits interstate and foreign commerce of dangerous exotics such as lions, tigers, leopards, cheetahs, jaguars, and cougars to be used as pets. The signing took place on 19 December 2003.

A spokesperson for American Humane, a national coalition of organizations for the protection of animals, welcomed the new legislation by saying: "The passage of the Captive Wildlife Safety Act is an important step towards eradicating the private ownership of big cats and other exotic animals as pets. It is critical for both the well-being and safety of animals and the protection of the public."

While the law will prevent the trade in exotic animals between states and to /from countries outside the U.S. it does not address the issue of continued breeding of exotics in individual states and sales to residents of those states. As an example, approximately 5,000 to 10,000 large exotic cats are kept as pets in the U.S.

Currently 19 states ban the private ownership of "dangerous" exotic animals as pets. The definition of "dangerous" varies from jurisdiction to jurisdiction, as does the meaning of what constitutes a "pet" and what constitutes an animal kept for business purposes. *Source: American Humane Organization Press Release 3 January 2004.*

Interior Dept. Announces Grants Supporting Coastal Wetlands Conservation Efforts

Interior Secretary Gale Norton recently announced that the U.S. Fish and Wildlife Service (USFWS) will award nearly \$17 million in grants to 10 states to conserve, restore and protect coastal wetlands. States awarded grants for fiscal year 2004 under the National Coastal Wetlands Conservation Grant Program are Alabama, Alaska, Connecticut, Florida, Massachusetts, New Jersey, South Carolina, Texas, Virginia and Washington.

The grants, which provide funding for 20 projects, will be awarded through the National Coastal Wetlands Conservation Grant program and will be supplemented by more than \$42 million from state and private partners. The Service makes yearly matching grants to coastal states and U.S. territories for projects involving the acquisition, restoration or enhancement of coastal wetlands. Projects are administered for long-term conservation benefits to wildlife and habitat.

Partners in this year's Coastal Wetlands Conservation Grants projects include state natural resources agencies, Native American tribes and trusts, county and local governments, private landowners, and conservation groups such as Rocky Mountain Elk Foundation, Ducks Unlimited and The Nature Conservancy.

To date, the USFWS has awarded more than \$139 million in grants to 25 states and one U.S. territory under the National Coastal Wetlands Conservation Grant Program. When the 2004 grants projects are complete, they will have protected and/or restored more than 19,000 acres. About 167,000 acres will have been protected or restored since the wetlands grant program began in 1990. *Source: USFWS Press Release 8 December 2003.*

Taiwan Bans Selling Dog Meat

The Taiwan Legislative Yuan (similar to the U.S. Congress) passed new rules under Taiwan's Animal Protection Law to ban the selling of dogs and other companion animals as food. Previously the law only banned the killing of dogs and cats for their skin, meat or other parts. This failed, however, to stop vendors from selling dogs and cats to restaurants, or to keep restaurants from offering their meat as a delicacy. The vendors and restaurants avoided fines for violating the law by claiming that they did

not kill the animals themselves. The fine for violators of the new rules have been increased from approximately \$1500 US to \$7350 US. The fine for abandoning or abusing dogs will remain at \$4500 US.

According to myth, dog meat is believed to ward off illness in those who consume it. The meat is especially popular during the winter months when colds and the flu are more prevalent. While most restaurants do not list dog meat on their menus, many are well known for serving it to their customers upon request. A survey undertaken by Taiwan's Care of Animals and Protect the Earth Organization said the selling of dog meat by restaurants and street vendors was due to a lack of law enforcement. The unit price for dogs ranged from \$45 US to \$450 US. According to the survey, shops selling dog meat still exist throughout Taiwan. *Source: Taipei Times 3 January 2004*

Draft Recovery Plan for Hawaiian Alala Bird

A draft revised recovery plan for the alala or Hawaiian crow was released in December 2003 by the USFWS for public review and comment. The alala is one of Hawaii's rarest forest birds and is found only on the island of Hawaii.

"This revised recovery plan is based on the best scientific data currently available," said Gina Shultz, acting field supervisor for the USFWS's Pacific Islands Fish and Wildlife Office. "We are seeking information from the public to expand our knowledge of this species and its requirements and to obtain information about management actions and their effectiveness."

The Endangered Species Act requires the development of recovery plans for listed species unless such a plan would not promote the conservation of a particular species. Recovery plans describe actions considered necessary for species conservation, establish criteria for downlisting or delisting listed species, and estimate time and cost for implementing recovery measures needed. Recovery plans do not obligate the expenditure of funds or require that the recommended actions be implemented.

"At this time, the most urgent need is to increase the number of birds as quickly as possible to retain maximum genetic diversity over time," said Shultz. "Mortality in the wild is likely, under current conditions, to be higher than in captivity. Therefore, captive propagation offers the safest means to safeguard the species, recovery potential in the near term."

At present, two captive propagation facilities - the Maui and Keauhou Bird Conservation Centers managed by the Zoological Society of San Diego - are maintaining 40 adult alala. Within five years, according to mathematical models, the population needs to grow from 40 to 77 birds in order to avoid further loss of irreplaceable genetic diversity.

The plan calls for removal of feral ungulates that degrade forest habitat, spread introduced non-native plant species, and create breeding sites for disease carrying mosquitoes; control of introduced rodents that eat forest bird eggs and young birds; removal of feral cats that carry toxoplasmosis; and control of invasive plant species. Habitat management and restoration will improve food resources and vegetation structure, increasing foods available to released alala and providing better cover for escape. The plan also includes development of strategies to reduce mortality of reintroduced alala by io (Hawaiian hawk) predation, and the development of means to address threats of avian disease.

The draft plan suggests that alala be parent-reared if possible and released in areas with adequate understory cover to reduce the threat of predation by io. Released birds may receive training to survive in areas with io and other threats, and food sources that attract io such as rodents will be controlled.

Source: USFWS Press Release 18 December 2003.

Free-Range Cattle Removed from Alaska Maritime National Wildlife Refuge

Twenty-three privately-owned, free-range cattle were transported by private barge from Chirikof Island to Kodiak Island, Alaska, where they are now under the control of their owners and a local vet. The privately-owned cattle were removed from Chirikof Island, part of the Alaska Maritime National Wildlife Refuge, to facilitate recovery of the island's biological diversity and ecosystem health. The purposes of the refuge, as stated in the Alaska National Interest Lands Conservation Act, include conserving seabird populations of national and international significance and does not include private sector grazing. As a result, the USFWS worked with a private company and owner of the cattle to remove the livestock from the island. *Source: USFWS Press Release 5 December 2003*

USDA Bans Slaughter or Sale of “Downed” Cows

The Secretary of Agriculture, Ann M. Veneman, announced on 30 December 2003 that: “Effective immediately, USDA will ban all downer cattle from the human food chain.” The ban came one week after the first confirmed case of mad cow disease in the U.S. and after more than a decade of lobbying by animal protection groups seeking such a ban. Prior to the announcement the USDA had consistently defended and advocated the sending of downed cows - those who are too sick or injured to stand or walk - to USDA slaughterhouses.

While a number of states already restricted the movement of downers at state-licensed facilities, the newly announced federal ban will apply in all state and at all federally inspected slaughterhouses in the U.S. While the immediate catalyst for the ban has been the discovery of mad cow disease in a U.S. animal, humane rights organizations are claiming a victory based in part on extensive lobbying and letter-writing by their members. *Source: Farm Sanctuary Press Release 3 January 2004.*

Cameroon Demands Bushmeat Action

Cameroon is “demanding international action” to control the bushmeat trade which “threatens the survival of several already endangered species, including elephants and great apes” reports *BBC News*. Some “five million tones of bushmeat” are harvested in the Congo Basin alone every year, and Cameroon contends that local consumption is not the problem, “but the wider trade, taking the meat into the towns and out of the country.” According to Cameroon’s environment minister, “Now that African governments have recognized that bushmeat is a priority the international community must act, act now, and act quickly to make funding available to address the bushmeat crisis.” *Source: GREENlines Issue 2012 12-17-03*

Campaign Launched to Preserve the ESA

To mark the 30th anniversary of passage of the ESA, the act’s author Rep. John Dingle, joined with members of Congress, conservationists, scientists and environmental groups in pledging “to fight to preserve the Act’s integrity against rollbacks for another 30 years (12/9 press release). According to Congressman Dingel, “This monumental legislation has, quite literally, saved our natural heritage while allowing the U.S. economy to grow at record rates.” Brock Evans of the ESC added, “The ESA has been much more than just a magnificent law to protect American’s most imperiled natural heritage. It is a profoundly moral statement, uniquely American in its vision, its optimism, and its promise.” Pictures of the celebration, text of the pledge and other event material are available online at <http://www.house.gov/dingell> .

While the administration, conservationists, environmental groups and private sector interests may disagree on ESA implementation, there appears to be growing agreement among many that “the future of species protection will be defined as much by cooperative programs that engage private landowners as it is by agency-centered “command and control, approaches that the Bush administration has worked to roll back” reports *Greenwire*. Environmental Defense maintains that there is a “quiet revolution underway” focusing on relatively new protection mechanisms such as “Safe Harbor” agreements. *Source: GREENlines Issue #2007 12-10-03*

Ivory Trade Flourishes

Three African countries, Nigeria, Ivory Coast and Senegal have been “singled out” for ignoring the ban on the ivory trade, “fueling poaching and threatening the survival of elephants” reports the *Guardian*, *AP*. The report by wildlife trade monitoring group TRAFFIC reveal the nearly 9,000 pounds of illegal ivory is on sale in the countries, “which have nearly wiped out their own elephant populations.” TRAFFIC said the trade in those countries is “just a snapshot of the problem when we factor in all the uncontrolled manufacturing; buying and selling over a year, these numbers climb to frightening dimensions.” *Source: Greenlines Issue 2011 12-16-03*

Whale Nursery Protected

Canada has established a marine protected area, its first on the Atlantic coast, in “a spectacular undersea canyon known as the nursery of the North Atlantic that is home to two species of endangered whales” says the *Globe and Mail*. The area off Halifax is known as the “Gully” and “will be spared intensive fishing and oil and gas exploration.” Water circulation patterns make it plankton rich and “an ideal environment for larvae and young fish of many species, and is a preferred feeding ground for rare bottlenose and blue whales.” *Source: GREENlines Issue 2007 12-10-03*

Extinction of Puget Sound Orcas Significant

A federal judge has overturned a Bush administration decision that the extinction of Puget Sound orcas would not be significant to the species as a whole says the *Seattle Post-Intelligencer*. The ruling found that the administration failed to use “the best available science” by relying on “outdated and inaccurate” scientific notions from 1758 that all orcas worldwide were one species when it denied ESA protection to the Puget Sound population. While the judge did not order the orca population to be listed, it gave the NMFS a year to “issue a new decision.” Earthjustice, which represented the Center for Biological Diversity and other conservation groups in the listing lawsuit said “it will be difficult for fisheries service not to extend ESA protections to the orcas.” *Source: GREENlines Issue #2014 12-19-03*

Green Sea Turtle Comeback

According to researchers, after 25 years of protection under the ESA, Hawaiian waters now boast “as many as 35,000 mature green sea turtles and perhaps 250,000 juveniles age 6 or under” reports the *Honolulu Star-Bulletin*. Most credit one marine biologist, George Balazs, for the comeback. His research raised concerns that people were harvesting the sea turtles at a rate faster than the animals could replace themselves, information that led to their 1978 listing. Today, their recovery is “significant enough that if the trend continues” ESA protection may ultimately be removed. *Source: GREENlines Issue #2020 1-08-04*

The Pinnacle of Condor Reintroduction

Two California condors have been released and are flying free over Pinnacles National Monument, the first reintroduction for the 240,000 acre park about a hundred miles southeast of San Francisco reports the *SFGate.com*, AP. By the 1980s, habitat loss, hunting and egg poaching had driven the condors, which once ranged from Canada to Mexico, to the verge of extinction with the last 22 taken into a captive breeding program. Thanks to \$35 million in federal and private funding and cooperative efforts there are 216 California condors today, with 83 living in the wild. *Source: GREENlines Issue #2016 12-23-03*

The Whoopers Have Landed

A third generation flock of 16 whooping cranes led by ultralight aircraft has successfully completed a migration from Wisconsin to their winter home in Florida reports the *Chattanooga.com*. “All but two of the 20 cranes from the ultralight-led migration have completed their own unassisted southward migrations, representing another milestone in this historic reintroduction effort” to establish an eastern migrating flock. After being on “the verge of extinction in the 1940s,” the species now numbers about 300 wild birds, with the only other migrating population of whooping cranes nesting in Canada, s Northwest Territories and wintering at Aransas N.W.R. in Texas. The Whooping Crane Eastern Partnership, an international coalition of state, NGO and federal partners, is conducting the reintroduction project. *Source: GREENlines Issue 2007 12-10-03*

Two More Mexican Wolves Found Dead

The USFWS is investigating the deaths of two more endangered Mexican gray wolves, the tenth and eleventh wolves found dead in New Mexico and Arizona since March of last year says *SFGate.com*, AP. The agency has confirmed that two of the wolves killed last year were shot and two hit by cars with another four listed as “possible gunshot or auto collision victims.” There are now some 30 Mexican gray wolves living in the wild as part of the reintroduction program that began in March of 1998 and there is a \$45,000 reward for information leading to an arrest and conviction of anyone who has killed a protected Mexican gray wolf. *Source: GREENlines Issue 2021 1-09-04*

Invasive Invasion Accelerates

Scientists are warning that U.S. problems with invasive species are “getting worse” and have become “the No. 2 cause of death to endangered species - beating out pollution, overharvesting, disease and global warming” reports the *Dallas Morning News*. With an estimated 50,000 “exotic” plants, animals and microbes already in the U.S. and the number of invaders “likely to rise,” the impacts on the environment are hard to predict but “the odds are good that some of these critters will be very, very, bad, even though the risk that a single species will become invasive may be low.” *Source: GREENlines Issue 2021 1-09-04*

Institutions wishing to advertise employment opportunities are asked to send pertinent data by the 10th of each month to: Opportunity Knocks/AKF, 3601 SW 29th St., Suite 133, Topeka, KS 66614-2054. Please include closing date for positions available, and when setting these dates keep in mind that because of bulk-mail, most readers do not receive their AKF until the middle of the month or later. There is no charge for this service and fax or e-mail listings of positions which become available close to deadline are accepted. Our Fax is (785) 273-1980; e-mail: akfeditor@zk.kscoxmail.com< Listing may be sent as MS Word attachment. We are no longer located at the Topeka Zoo, so please note new address to avoid delays in processing.

Zookeeper - The Living Desert, Palm Desert, CA

The Living Desert is a medium-sized zoo located in the Palm Springs area of California, just two hours from the Pacific Ocean, two hours from Big Bear ski resort, and only an hour away from beautiful Joshua Tree National Park. We are currently accepting applications for keeper positions. All positions are full-time with paid benefits. This is an excellent opportunity for individuals interested in working at a growing, AZA-accredited institution. Please submit a resumé with cover letter by **15 February, 2004** to: Kim Clark, Assistant Curator, The Living Desert, 47-900 Portola Ave., Palm Desert, CA 92260. **Requirements:** Applicants must be able to lift 50 lbs and work weekends and holidays.

Zoo Keeper - Chaffee Zoological Gardens of Fresno, Fresno, CA

Applications may be obtained from City of Fresno Personnel Services Department, 2600 Fresno St., Fresno, CA 93721, (559) 621-6950. Filing deadline is 5:00 p.m., Friday, **12 March, 2004**. Job bulletin and application can also be found on the website @www.fresno.gov< Postmarks are not accepted. EOE. Salary range: \$2,312 - \$2,812/mo. **Responsibilities:** Responsible for the care, feeding, maintenance, and observation for health and reproduction of a variety of zoo animals at the Chaffee Zoological Gardens of Fresno. **Requirements:** One year experience in the care, handling, and feeding of animals in a zoo setting. Twelve (12) semester units of accredited college level course work in animal science, zoology, biology, wildlife management, or closely related field may be substituted for six months of required experience. Knowledge of behavioral enhancement of exhibits, setting up breeding conditions, and specialized requirements of raising young is desirable. Additional years of the required experience is preferred.

Hoofstock Keeper - Houston Zoo, Houston, TX

Send Resumé and Application (on Zoo website @www.houstonzoo.org) To: Attn. Human Resources Dept. Houston Zoo 1513 North MacGregor Dr. Houston, TX. 77030-1603 or Fax (713)533-6755. Excellent benefits include medical, dental, and life insurance, and paid vacation, sick leave, and holidays. Salary Range \$21-25,000. EOE. **Minimum Requirements:** One (1) year of animal experience (2 years preferred). Possess and maintain a valid Driver's license and be able to lift up to 80 lbs. **Responsibilities:** Keeper duties are as follows - Carry out all aspects of the daily care of assigned animals including cleaning, feeding, grooming, and observing animals. Administer medication and treatment as directed, provide training and enrichment, participate in education and conservation programs, and observe and evaluate animal condition, behavior, and responses as well as communicate observations orally and on written reports. Prepare and feed appropriate diets, noting conformance of foods provided to diets prescribed for each animal, administer prescribed medications and dietary supplements, monitor food and medicine consumption, and check on integrity of enclosures and structures, ensuring safety and welfare of animals, Zoo visitors, and staff in accordance with established guidelines. Will also maintain live plants within enclosures ensuring neat, attractive exhibits, perform minor repairs and preventative maintenance as necessary, maintain clean and organized exhibits, equipment, and keeper areas, and improve the quality of life of the animal collection by providing environmental and behavioral enrichment opportunities. Other duties include training selected animals through operant conditioning for purposes of gaining cooperation for veterinary treatment and/or public demonstrations and installing exhibit furnishings, props, and decorations safely, attractively and in a manner consistent with Zoo guidelines. Provide appropriate enrichment to all assigned animals consistent with section guidelines.

Animal Keeper/Guides - Soco Gardens Zoo, Maggie Valley, NC

Several positions available for 2004 season, May through October. Salary \$240.00 per week, living quarters, utilities and uniforms also furnished. Please send cover letter and resumé to: Jim Miller, Soco Gardens Zoo, 89 Evans Cove. Rd., Maggie Valley, NC 28751, as soon as possible. **Requirements:** Paid zoo experience preferred but, volunteer experience acceptable; non-smokers; applicants must have strong, audible voices, neat appearance, good personalities, and must work well with co-workers as well as with the public. **Responsibilities:** duties include daily animal care of various primates, large and small cats, bear, parrots, wallaby, various reptiles, and others; exhibit cleaning and maintenance; various other maintenance duties; and educational lectures in a tour situation. Must lecture on both non venomous and venomous reptiles. Also, must have experience in handling non-venomous reptiles or a willingness to learn. Must be willing to work six days a week, including weekends and holidays.

Bird Keeper - Sacramento Zoological Society, Sacramento, CA

Send resumé to: Maggie Liguori, Animal Collections Manager, Sacramento Zoo, 3930 West Land Park Dr., Sacramento, CA 95822; (916) 264-8817; mliguori@cityofsacramento.org< We offer good benefits (in a city with no snow) and lots of fun! **Position open until filled.** **Responsibilities:** looking for attention to detail in the areas of diet preparation, behavioral enrichment, observation, and research. Our zookeepers are good communicators, project-oriented and able to prioritize across seasons. **Requirements:** requires AS degree with two (2) years experience in a zoo bird collection, related experience may be substituted.

Animal Handling and Presentation Internship - Point Defiance Zoo & Aquarium, Tacoma, WA

Now accepting applications for internships for the summer of 2004. This program is designed to provide participants with practical learning experience and knowledge in the field of animal husbandry, animal training and handling, and public presentations. This is an UNPAID internship and requires a commitment of 40 hours per week (including weekends) during the months of June, July and August. The internship is open to students currently enrolled or recently graduated from a college or university who have completed a minimum of one (1) year course work in the life sciences. Application deadline is 15 April, 2004. For more information or to request an application, contact Wild Wonders Outdoor theater staff at (253) 404-3670. **Responsibilities:** Interns will care for and handle a variety of birds, reptiles and mammals as well as participate in informal presentations in the Zoo's new Wild Wonders Outdoor Theater, a covered, 350-seat amphitheater that will feature off-leash and free-flight behaviors.

Reptile Internship

To apply send a cover letter, resumé, and at least two (2) (preferably 3) references to: Kristen Wiley, Internship Coordinator, Kentucky Reptile Zoo, 200 L & E Railroad, Slade, KY 40376. Or send via email to: kyreptil@pop.mis.net< Starting dates are flexible, but a minimum commitment of three months covering SPRING (April-June), or SUMMER (June - August), or FALL (September - November) is required. Deadlines for applications each year are: SPRING - February 1st; SUMMER - March 1st; and FALL - June 1st.

The Kentucky Reptile Zoo, a nonprofit organization, is seeking a student intern for the 2004 Fall season. The zoo is an educational exhibit, reptile breeding and venom research facility located near Kentucky's Red River Gorge and Natural Bridge State Park. **Responsibilities:** The intern will assist in the captive maintenance of the zoo's reptile collection, collect admissions to the exhibit, give interpretive talks and interact with the public, assist with educational outreach programs, and perform other duties as assigned. In addition, the intern will be responsible for the completion of at least one research project related to the field of herpetology. The intern will **not be involved** in the handling of any venomous reptiles. **Requirements:** Desirable qualifications include a willingness to handle snakes and other reptiles on a daily basis, ability to communicate effectively with people, writing skills, orientation to details, and self-motivation. The intern will be required to work both Saturday and Sunday, with days off during the week. Students majoring in the biological or natural sciences are preferred. Interns are required to be either college students or recent graduates. Former interns have arranged for academic credit with their institutions. Interns have also been successful in finding zoo keeper positions, with a hire rate of over 95%! Benefits include experience with the most extensive and diverse collection of snakes in the United States, housing, and \$55/week to cover expenses. Personal transportation is recommended. A valid driver's license is required.

Big Cat Internships - Tiger Creek Wildlife Refuge (TCWR), Tyler, TXAs seen on Animal Planet in "Growing Up Tiger", TCWR is a division of Tiger Missing Link Foundation.

Commencement date: On-going duration: three (3) months on a month-by-month basis. For additional information to see what past interns have to say about Tiger Creek, visit www.tigercreek.org< Are you interested in learning more about big cats or establishing a career path working in conservation as a zookeeper, a wildlife manager or a veterinarian? You can Earn Your STRIPES at Tiger Creek and obtain college credit through your college or university at the same time, there are up to four (4) positions available. At Tiger Creek you are more than a worker, you are considered a friend and we strive to build long-term working relations as we know you are the future animal caretakers! Interns are utilized for permanent animal care positions through a qualification system with opportunity for full-time paid animal keeper positions available based upon performance after training. **Requirements:** You provide a six (6)-day work week with a strong commitment for three (3) months, be capable of paying attention to details and follow safety rules, you must have your own transportation to and from the refuge and provide your own food while here. We provide room & board, uniforms, materials and curriculum, indoctrination and safety training. We even throw in use of the "tiger truck" for errands and entertainment adventures that you seek out. Within the new Intern House there is central heat and air, all furnished, a full kitchen, with two full bathrooms, two rooms shared by two students, a shared telephone line for incoming calls, internet access for email and surfing, a VCR, TV and even Satellite so that you and the other interns can enjoy Animal Planet during your off hours! All of this

and a few rescued dogs or puppies in the backyard...because we want your stay to be as comfortable as possible while here at Tiger Creek. The Tyler-East Texas area has a lot to offer, there is horse back riding available at no cost to our interns, lakes within beautiful parks, movie theaters, numerous local night clubs and plenty of restaurants and much more.

Big Cat Internship – Wildlife on Easy Street, Tampa, FL

For more information contact Scott Lope at 813-323-5991 or email at catfoto1@aol.com

Two (2) positions available for six-month internship at TAOS accredited non-profit big cat sanctuary. www.wildlifeoneasystreet.com < **Responsibilities** (include but are not limited to): daily husbandry, exhibit cleaning, diet preparation, feeding, operant conditioning and behavioral enrichment for the following species: lions, tigers, leopards, cougars, lynxes, servals, caracals, bobcats, lemurs and other exotic animals. We provide invaluable hands-on experience, on-site housing and utilities, safety training and educational materials. Advanced training and long-term employment opportunities exist for the right candidates. **Requirements:** applicants must be willing to work six days a week, some holidays and follow strict safety guidelines. Hard work ethic and love of animals more important than degree.

Internships - The Florida Aquarium, Tampa, FL

Internships are available in Animal Health, Animal Programs and Husbandry departments. Internships available year-round for varying lengths of time and can be tailored to the individual student's needs. Internships are unpaid but provide valuable hands-on experience. Interested persons should send resumé to: Human Resources, 701 Channelside Dr., Tampa, FL 33602. For more information visit our website at www.flaquarium.org < **Responsibilities:** food preparation, feeding, cleaning enclosures, assist with medical procedures, animal observations, daily record keeping, enrichment activities, assist with training sessions and shows.

Volunteer Positions Available - Munda Wanga's Wildlife Park and Sanctuary, Zambia

For more information contact Lee Stewart through e-mail: sanctuary@zamnet.zm or take a look at our website: <http://www.mundawanga.com> < Three-week volunteer opportunities available to keen and enthusiastic people looking to gain hands-on experience working at an African wildlife park and sanctuary. Longer volunteer periods are available depending upon volunteer's experience. Species that you could be working with include lions, tigers, wild dogs, various primates, an American black bear and a baby elephant. Volunteer duties will vary hugely upon volunteer's interest, previous experience and the Park and Sanctuary's priorities, which will vary according to the time of year and what construction/relocation programmes are on at the time.

SOS Rhino Seeks Volunteers - Borneo, Sumatra

SOS Rhino is looking for volunteers interested in helping us in our efforts to save the Sumatran rhinoceros. Our Borneo Team is studying the demographics of the remaining animals in Tabin Wildlife Reserve to determine when patrol units, habitat protection, or translocation may play a role in the rhinos' survival. Please visit SOS Rhino's web site for detailed information: <http://www.sosrhino.org/programs/volunteer.php> Or contact Cindy Salopek, Projects Associate/SOS Rhino via e-mail at: cindy@sosrhino.org <

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an animal facility*

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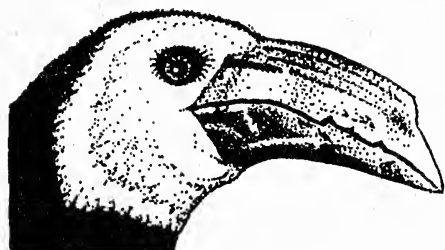


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Rhinoceros hornbill



Sulawesi hornbill



White-headed hornbill

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**The Journal of the American
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MARCH 2004

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Animal Keepers' Forum is published monthly by the American Association of Zoo Keepers, Inc., 3601 S.W. 29th Street, Suite 133, Topeka, KS 66614-2054. Ten dollars of each membership fee goes toward the annual publication costs of Animal Keepers' Forum. Postage paid at Topeka, KS.

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About the Cover.....

Featured on this month's cover are three species of Hornbill - Sulawesi (*Penelopides exarhatus sanfordi*), White-headed (*Aceros l. leucocephalus*), and Rhinoceros (*Buceros rhinoceros silvestris*)-drawn by Kecia Spears, a Keeper with the Zoological Society of San Diego, San Diego, CA. There are 54 species of hornbills. They are Old World birds, ranging from Africa across India and Asia to Papua New Guinea. Hornbills are known for their large, downward curving bills. Notable in many species is the hard casque, or outgrowth, adorning the top mandible. This casque is hollow and composed of keratin. Hornbills have short, broad, rounded wings that are good for short flight, not lengthy ones. Many species of hornbill are known for their protective nesting habits. The female nests in a tree cavity. She will be walled in with food, saliva, and droppings with only a small slit remaining open. Through this opening, the male will feed her throughout the nesting season which lasts approximately four months. The female will eject droppings out of the opening, keeping the nest clean. This method of nesting protects eggs and chicks from predators such as snakes and monkeys. Thanks, Kecia!

Animal Keepers' Forum publishes original papers and news items of interest to the animal keeping profession. Non-members are welcome to submit articles for consideration. Articles should be typed or hand-printed and double-spaced. Authors are encouraged to submit their manuscripts on a disk as well as in hard copy form. Manuscripts submitted either on disk or electronically as attachments to an email should be submitted in Microsoft WORD. All illustrations, graphs, charts and tables should be clearly marked, in final form and should fit in a page size **no greater than 5.5" x 8.5"** (14cm x 22cm). Literature used should be cited in the text (Brown, 1986) and alphabetically in the final bibliography. Avoid footnotes. Include scientific name (as per ISIS) the first time an animal name is used. Thereafter use common name. Use metric system for weights and measurements (standard equivalents may be noted in parenthesis). Use the continental dating system (day-month-year). Times should be listed as per the 24-hour clock (0800, 1630 hrs. etc.). Glossy black and white or color prints (minimum size 3" x 5" [8cm x 14cm]) are accepted. Clearly marked captions should accompany photos. Please list photo credit on back of photo. Photographs may be submitted electronically as either JPEG or TIFF file attachments.

Articles sent to Animal Keepers' Forum will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for AKF. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the editor. The editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed, appropriately-sized envelope. Telephone, fax or email contributions of late-breaking news or last-minute insertions are accepted as space allows. Phone 1-800-242-4519 (US); 1-800-468-1966 (Canada); FAX (785) 273-1980; email is akfeditor@zk.kscoxmail.com

Deadline for each regular issue is the 10th of the preceding month.

Dedicated issues may have separate deadline dates and will be noted by the editor.

Articles printed do not necessarily reflect the opinions of the AKF staff or the American Association of Zoo Keepers, Inc. Publication does not indicate endorsement by the Association.

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E-Mail Addresses: You may reach Barbara Manspeaker at AAZK Administrative Offices at: aazkoffice@zk.kscoxmail.com You may reach Susan Chan and *Animal Keepers' Forum* at: akfeditor@zk.kscoxmail.com

AAZK Website Address: www.aazk.org

BFR Website: <http://bfr.aazk.org>

Scoops & Scuttlebutt



Chapters Takes Advantage of Cleveland Challenge

The Greater Houston AAZK Chapter was the first to take advantage of the "matching funds" available from the Cleveland Challenge (see below) to double their donation (\$250.00 to General Operating Fund/GOF) to AAZK, Inc. Other Chapters that have now also taken advantage of the Challenge include: Utah Chapter of AAZK (\$250.00); AAZK of Cheyenne Mountain Zoo Chapter (\$250.00, split between AAZK Endowment Fund and CPR Fund); Point Defiance AAZK Chapter (\$1,421.81 for GOF and CPR); San Francisco AAZK Chapter (\$250.00 for GOF); and Northern Lights Chapter AAZK (\$355.00 for GOF). The Board of Directors and Administrative Office staff wish to thank these Chapters for their outstanding support. Chapters have until April 1st to take advantage of the Cleveland Challenge "matching funds" offer.

Cleveland Matching Funds Challenge April 1st Deadline Fast Approaching !

So you thought the "Cleveland Challenge" was over? Think again. We're back. We know... you can't get rid of us. We just enjoyed planning the 2003 AAZK Conference so much that we thought we would continue you on with the next phase. We have decided to institute the "Cleveland Challenge-Round 2."

Since the "Cleveland Challenge" encouraged so many of you to donate to our conference, we want to now encourage you to donate to AAZK, Inc. So here's the rules: for any Chapter donating to AAZK, Inc. we will **match your donation** dollar for dollar up to \$5000 from now until **1 April, 2004**. AAZK, Inc. needs all of our support, and this way your dollars will be worth double. So when you are thinking of where to send your Christmas fundraising money, or you are thinking of adding a little extra in your recharter package, think of the "Cleveland Challenge-Round 2."

AAZK Administrative Office will send us a listing of Chapter donations after the 1 April deadline and we will match them up to \$5000. Let's keep AAZK, Inc. moving forward by supporting the Association's programs and projects.

AAZK Marketing Committee Seeks Members

AAZK is currently restructuring the Marketing and Development Committee and we are seeking qualified members to assist in the following areas:

- 1.) Marketing of Publications
- 2.) Development and Marketing of Products
- 3.) Coordination of Grants and Donations

If you have participated at the Chapter level with marketing or fundraising, or have experience in any of these areas and are ready to participate in AAZK at the national level, please contact Bob Hayes (BHayes@sandiegozoo.org) for more information.

Bake Sale "Sweet" Deal for Primates *submitted by Wally Swett, President, Primarily Primates, Inc.*

Much appreciation and thanks go to the Rocky Mountain Chapter of AAZK for their bake sale at the Denver zoo. Their successful efforts to raise money in support of the primates at Primarily Primates, Inc. was matched with other funds by the Chapter itself. On behalf of all of the primates and other creatures at Primarily Primates, thank you Rocky Mountain AAZK Chapter and the Denver Zoo for being our friends and supporting our efforts to aid these beautiful individuals. Primarily Primates, Inc. is a non-profit animal sanctuary. For more information, contact Wally Swett, P.O.Box 207, San Antonio, TX 78291 or call (830) 755-4616 for more information.

Wildlife Research Expedition-Field Techniques Course

The Dallas Zoo is currently accepting applications for its 15th Wildlife Research Expedition (WRE) to the Los Ebanos Ranch in rural northeastern Mexico, from May 1-May 14, 2004. This trip is going to offer a course to learn field techniques for tracking, capture and study of wildlife and the biological assessment of Los Ebanos Ranch, with emphasis on behavioral ecology of endangered cats and coatimundi in northeastern Mexico. Additional components include capturing and banding raptors.

The trip will be led by zoologist Dr. Todd Bowsher of the Dallas Zoo. The on-site project leader is field biologist Arturo Caso, who has been studying endangered cats in Mexico for many years.

Conditions on the ranch are comfortable for a field study. Participants will stay in attractive lakeside bungalows with toilets, showers and electricity (in the evening). The ranch cooks prepare three meals each day and water on the ranch is purified well water.

The cost of the trip is \$1700.00, including round-trip transportation to the study site from Harlingen, TX. (Participants must get to Harlingen on their own and pay for 1 nights stay there) Some trip expenses may be tax deductible. For more information, contact Dr. Bowsher at the Dallas Zoo, 214-671-0432 (tbowsher@msn.com) or visit Arturo Caso's website at www.angelfire.com/tx/margay/index.html <<http://www.angelfire.com/tx/margay/index.html>>

A Choice of Trips Offered For Bowling for Rhinos Winners & Other BFR News Items

The International Rhino Foundation has agreed to fund two additional top money raisers in the Bowling for Rhino event to visit the sites we support. AAZK and IRF are currently finalizing a Memorandum of Agreement. Winners will have the choice of visiting Ujung Kulon, Way Kambas and Bukit Barisan Seletan National Parks in Indonesia and have the opportunity to see how Bowling for Rhino funds are put to use.

These trips will be offered in addition to the Lewa, Kenya trips. In order to be eligible to win the BBS trips, **one must have raised a minimum of \$1,000 and be an AAZK member in good standing**. Those who have won a visit to Lewa in the past are now eligible to win a BBS trip. For logistical reasons, only the winners (no guests) will be allowed to go on the BBS trip.

The winners will be based on the amount of money raised in 2004 for BFR and will travel in the spring of 2005. The top two money raisers will be offered their choice of either trip, while the fundraisers who place third and fourth will be offered the trips not chosen by the top two fundraisers. If a previous Lewa winner finishes in the top two, they are only eligible for travel to BBS.

So make your BFR goal at least \$1,000 and you will have a shot at one of four winning trips (much better odds than the lotto!) For questions, please contact Patty Pearthree at ppear3@aazk.org or 919-678-0449.

• Please send your 2004 Bowling for Rhinos event date and contact information ASAP to: Patty Pearthree, c/o BFR, 318 Montibello Dr., Cary, NC 27513. Chris Hartley from the Blue Rhino Gas Company will then contact local Blue Rhino companies in your area to get their support and participation in your event. Look for the BFR insert in the January 2004 issue of *AKF*.

AAZK Announces Availability of Granting Programs

The American Association of Zoo Keepers announces the availability of two granting opportunities:

The Conservation, Preservation and Restoration (CPR) Grant – This \$1,000.00 grant is designed to encourage and support efforts in conservation conducted by keepers and aquarists in zoological parks and aquariums around the world. Members of AAZK, Inc. in good standing are eligible to apply and receive this grant. The member **MUST** have an active role in the conservation effort submitted for consideration. The division of this grant between two projects is at the discretion of the CPR committee. Funds are made available only after a progress report and receipts have been submitted.

The Zoo Keeper Grants in Research – Two \$1,000.00 grants are funded annually to encourage and support noninvasive research conducted by keepers in zoo and aquarium settings. The principal investigator **MUST** be a full-time keeper and a member of AAZK, Inc. in good standing.

Deadline for application submission for either grant option is 01 June 2004. Successful grant recipients will be announced at the AAZK National Conference in Fall 2004. The grant cycle runs from 01 January 2005 to 31 December 2005. For further information or an application, see the AAZK Website at www.aazk.org, or contact Jan Reed-Smith, AAZK Grants Committees' Chair, jrsotter@iserv.net, 616-693-2680, Fax: 616-374-3263. Please specify which grant program you are interested in.

Dallas 2004 - "Pursuing Your Wild Passions"- September 26th - 30th

The Dallas 2004 AAZK Conference Committee would like to congratulate the Greater Houston Chapter for being the first to respond to the Chapter Challenge 2004. Thanks for your support.

What is Chapter Challenge 2004? In order to keep delegates' cost to a minimum, while ensuring the best possible conference, we are encouraging Chapters to donate. If your Chapter contributes \$250.00 or more, they will be entered into a drawing. The winning AAZK Chapter will receive one full registration and one double occupancy room for five nights at the Adam's Mark Hotel (Sept 26-30, 2004). Letters detailing all the information were sent to all AAZK Chapters in January. Start planning now to meet the challenge!!!



For everyone looking for the latest information on this year's conference, please visit our web site www.dallaszoo.com and click on 2004 AAZK conference. This will take you directly to our conference home page. Contact information is also provided if you have any additional questions. Program information/call for papers appears in the yellow insert in this issue of *AKF*. We look forward to seeing everyone in September!!!!

Leather Elves Design Contest

Attention all AAZK members, it's time to put your thinking caps on. The AAZK Enrichment Committee and The Leather Elves are happy to be sponsoring the 2nd Annual Enrichment Device Design Contest. If you have an idea for a device that's just taking up space in your brain or if you have built something that has worked particularly well with your animals, share it with the world. Entries will be judged on safety, innovation and affordability. Keep in mind The Leather Elves do not weld and they do not use materials such as sheet metal. The winning device will be named after you, built by The Leather Elves and a portion of the proceeds for each sale will go to the AAZK. Please send in a written description and a diagram or drawing of your idea (don't worry - you do not need to be a professional artist!!) to:

Robin Shewokis/ The Leather Elves
43 Mutton Lane
Weymouth, MA 02189

Entries must be received by **31 May, 2004**. The winning design will be announced at the AAZK National Conference in Dallas, TX and in a subsequent issue of the *AKF*.

Gorilla Journal Available Online

For those interested in gorilla conservation: The new issue of the newsletter "Gorilla Journal" is now ready for download on these websites.

English: <http://www.berggorilla.de/gj27e.pdf> (1.1 MB)

German: <http://www.berggorilla.de/gj27d.pdf> (1.7 MB)

French: <http://www.berggorilla.de/gj27f.pdf> (707 KB)

MOVING?

Please let us know when you change your address! It now costs AAZK 99 cents every time an *AKF* is returned because of an incorrect address. Call 1-800-242-4519 (U.S.) or 1-800-468-1966 (Canada) or e-mail aazkoffice@zk.kscoxmail.com to report your new address.

Coming Events

The Felid TAG Annual Conference Meeting - 26-28 March, 2004 in Albuquerque, NM. Due to a scheduling conflict the Felid TAG meeting has been rescheduled to these dates. Hosted by the Rio Grande Zoo. The SSP meeting will take place 24-25 March. For more information please contact Lynn Tupa at (505) 764-6216. ltupa@cabq.gov<; or Gwen Dragoo at ((505) 764-6262, gdragoo@cabq.gov<

4th Annual Animal Behavior Management Alliance (ABMA) Conference - 4-9 April, 2004. To be hosted by The National Aquarium in Baltimore and The Baltimore Zoo and held at The Renaissance Harborplace Hotel in downtown Baltimore. For more information: <http://www.theabma.org> contact Sue Hunter at shunter@aquaria.org or 410-576-1186. This conference will provide attendees with basic through advanced training theory and methods through lectures and workshops. Attendees will learn how positive training methods can be applied to zoo and aquarium animals, laboratory animals, farm animals, and pet animals to enhance their care and welfare. Site visits to the zoos and aquarium will provide first hand experiences with trainers and animals with live demonstrations of training and enrichment. In addition to tours and workshops, the conference will include 20-minute formal presentations, plus posters, and video sessions. Submissions will be considered for inclusion in the conference proceedings for the benefit of other animal professionals. The conference will focus on animal enrichment and positive reinforcement training as tools for better behavior management of animals in any setting.

AZA Traveling Training - 24-30 April 2004. To include Keeper Training Course. At the Houston Zoo, Houston, TX. Contact Alexis Weidner, Training Administrator at (301) 562-0777, Ext. 256.

The Association of Exotic Mammal Veterinarians - 5 May 2004 in Naples, FL. Seminar "First Step: Basics and Beyond" on May 5th; the International Conference on Exotics held May 6-8th. For more information contact Dr. Melissa Kling at 478-757-1600 or mkn.dvm.uga@worldnet.att.net.

ASZK Annual Conference 2004 - 7 - 9 May 2004. Australian Reptile Park, NSW, Australia. For additional information please contact email: slromer@bigpond.com

AZA Eastern Regional Conference - 12-15 May 2004 Hosted by Louisville Zoo. For information contact Sandra Allcn (502) 238-5608.

AZA Otter SSP* "Otter Keeper Workshop" - 2-4 June, 2004. To be held in conjunction with International Otter Colloquium (see next listing). The workshop registration fee is \$50.00 with enrollment limited to 20 participants. Lodging and meals are available at the university for roughly \$65.00 per day (includes three meals). For additional information contact jrsotter@iserv.net or go to the Knoxville Zoo website (www.knoxvillezoo.org) for a registration form.

IJX International Otter Colloquium - 4-10 June, 2004 at Frostburg State University, Frostburg, MD. Theme is

"Otters: Ambassadors for Aquatic Conservation". For more information go to <http://otter.frostburg.edu><

The Care and Management of Chimpanzee Workshop - 18-20 June, 2004. Sponsored by the Chimpanzee SSP* at the Saint Louis Zoo, St. Louis, MO. A comprehensive three-day course covering all aspects of progressive chimpanzee husbandry. Topics include managing complex social groups, operant conditioning training, social introductions, contraception strategies and enrichment programs. Registration is \$65.00 and includes program materials and lunches. Limited spaces available. For information contact Steve Ross, Chimpanzee SSP Coordinator at ross@lpzoo.org or by calling (312) 742-7263.<

2004 Gorilla Workshop - 25-28 June, 2004 in Calgary, Alberta, Canada. Hosted by the Calgary Zoo. Look for more details and registration information as they become available at their website - <http://2004gorillaworkshop.tripod.com><

AAV 25th Annual Conference & Expo - 16-20 August 2004 - in New Orleans, LA at the Sheraton New Orleans Hotel. For further information call (303)756-8380 or visit www.conferenceoffice.com/aaav<

Joint Conference of the American Assoc. of Zoo Veterinarians, the Wildlife Disease Assoc. and American Assoc. of Wildlife Veterinarians - 27 August-3 Sept., 2004 in San Diego, CA. For additional conference info, contact Wilbur Amand, VMD, Executive Director/AAZV at (610) 892-4812 or email - AAZV@aol.com<

2004 AZAD Conference - 8-12 September, 2004. Hosted by the Philadelphia Zoo. For more info contact Bert DeVries or Mary Murphy at AZAD2004@AZADocents.org<

25th Annual Elephant Managers Association Conference - 14-17 October, 2004 in Tulsa, OK. Hosted by Tulsa Zoo and Living Museum. Pre- and post-trips scheduled to Dickerson Park Zoo and Riddle's Elephant and Wildlife Sanctuary (18 Oct.). For more info email: karendunn@ci.tulsa.ok.us or visit www.elephant-managers.com and/or www.tulsazoo.org<

Carnivores 2004: Expanding Partnerships in Carnivore Conservation - 14-17 November, 2004. Presented by Defenders of Wildlife in Santa Fe, NM. Features three full days of sessions on terrestrial and marine carnivore issues, plus a poster session, field trip, silent auction, banquet and ambassador wolf sessions. Please visit conference website at www.carnivoreconference.org or leave a message at (202) 789-2844 ext.315 for details. Abstracts for papers being accepted until 1 June 2004.

6th International Aquarium Congress - 5-10 December 2004 in Monterey, CA. It will be hosted by the Monterey Bay Aquarium. Additional information in English, French and Japanese - is available online at <http://www.iac2004.org>

From the Executive Director.....

Spring has sprung once again (at least in Arizona). It's time for baseball's spring training, college basketball's Final Four and mid-year meeting Kansas tornadoes. Summer, with sunburn, mosquitoes and all the rest of nature's idea of fun is just around the corner.

Also around the corner, is our Annual Conference to be held in Dallas, TX from 26-30 September. Hosted by the Dallas Chapter of AAZK, the Conference, as they all are, promises to be exciting in content with excellent facilities to visit in Dallas and other Texas cities.

With that in mind, it is never too early to register for the Conference. Believe me, the Conference Committee appreciates those who commit early. If you have never given a paper before, this is an excellent opportunity to break the ice. Facilities are also more likely to fund delegates who are directly contributing to the process. Be creative in your approach to writing your paper. Topics that are not focused on behavioral training, enrichment and operant conditioning are encouraged.

It is always easy to tell us about your successes in the field. Sometimes, the valuable information lies in the failures or near failures, the goals that had to be continuously tweaked on the road to eventual success. Again, I encourage potential presenters to be creative in both their topics and their presentation approach.

Good luck and see you in Dallas.



Ed Hansen, AAZK Executive Director
Tucson, AZ



From the President.....

Just the other day I heard a colleague say that they had joined AAZK. I love to hear those words, one more valuable source of information that the Association can use. For that's really what AAZK is, a vast information source. The source of that information is YOU! Every member is a resource for the profession of zoo keeping. We all have unique and shared experiences that we can draw on to use in our jobs, and while we usually share our knowledge with those we work with daily, it's also important to remember that we are now a global network of people with a passion for what we do. It's important to share that passion with our colleagues. Gone are the days of reinventing the wheel. Trust me, someone somewhere has information pertinent to some aspect of your job.

There are numerous ways to share that information with others. Obviously the journal you are now reading is a great way to share that knowledge. Don't forget the AAZK listserve and website as well. There are also a number of committees that would welcome input from members of this Association. Additionally, we have publications that can be used to great advantage. One that is out right now is the Biological Info CD. Coming out soon is the 3rd edition of the Enrichment Notebook. Both of those publications were put together by members of AAZK. This Association offers a tremendous resource for its members - each other. Every individual is a vital link for us. Make sure to utilize those links to your full advantage. I'm grateful I have a support network that helps me do my job to the very best of my ability. I rely on that network to help me become a better keeper. So to all the members of this Association, thank you for providing me with an unending source of information. Take care and be safe.

Denise C. Wagner, AAZK President
Phoenix Zoo, Phoenix, AZ



Just Released.....

Biological Information on Selected Mammals 4th Edition

CDROM Version

A product of the American Association of Zoo Keepers, Inc.

The 1,396 page *Biological Information on Selected Mammal Species* CD covers a wide range from general, breeding, and young-rearing behavior to diet and physical descriptions of 590 species. The volume is in a PDF format allowing searches by Species (Common or Latin name); or Key words using the *Find* function; or by Species (Common or Latin name), Family; or Order using the *Bookmarks*. Table of Contents are given for Orders, Families, Species by Common Name, Species by Scientific Name, and Species by Order and Family. The Appendices cover a variety of information from behavioral patterns common to families (Bovoid displays) to taxonomy (Primates). References are listed by Order and Family.

Biological Information for Selected Mammals CD Order Form

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Price includes Domestic and Canadian First Class Postage.
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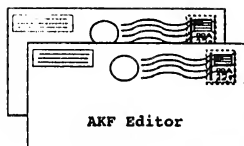
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Letter to the Editor



Dear Editor,

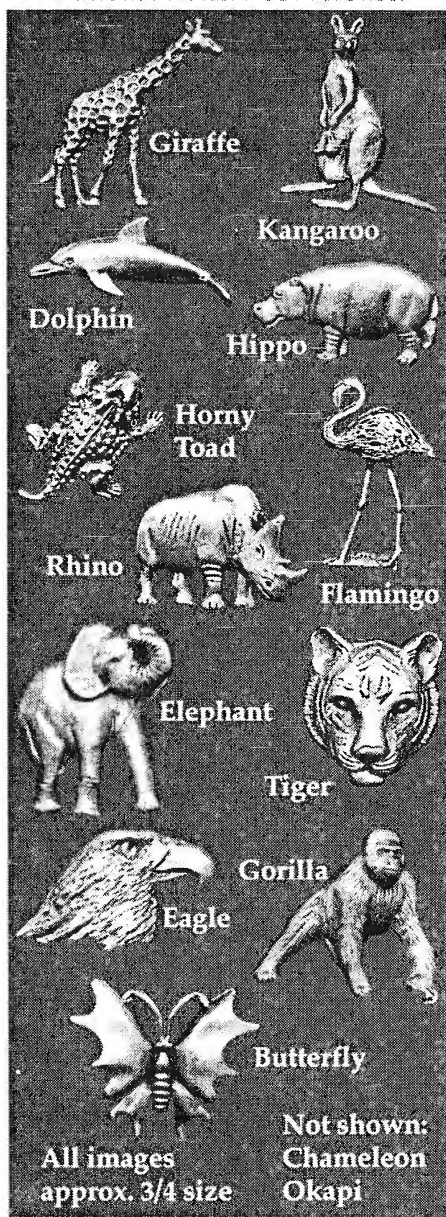
During my long zoo career I remember the many times I came up with what I thought were great ideas, only to have them rejected. I am sure many of you have experienced the same thing. To help remedy this problem and encourage people to share their ideas, no matter how grandiose, I suggest a monthly column for the *Animal Keepers' Forum* called My Perfect Exhibit. It would be an opportunity for animal care staff to "shoot the moon" by taking their favorite animals and creating an exhibit for them that spares no expense, with no idea too far out or too outrageous.

"My Perfect Exhibit" could be the work of one keeper or several people on the animal care staff. Include every aspect of exhibit design and animal care, including indoor and outdoor exhibit design, diets and feeding programs, graphics, enrichment, behavioral planning, time management, interactive activities, etc. Let it all hang out. Your ideas may not be heard at your zoo, but sharing THEM may benefit the animals in another zoo. Freely sharing ideas is a good way to care for our animals. That's what it's all about, isn't it?

*James Bousquet, Retired Zoo Keeper
Sacramento, CA*

(Editor's note: What do you think, readers? Would you be interested in this type of regular column in AKF? Let me know what you think at akfeditor@zk.kscoxmail.com<)

A Pewter Pin Makes a Great Gift And the Proceeds Support the 2004 National AAZK Conference.



Pins are \$12.00 each (S & H included). To order: List the pins and the number of each you want along with your name and complete mailing address. Make checks payable to *Dallas Zoo Keepers Association*. Mail your order to: AAZK Pins, c/o Dallas Zoo, 650 South R.L. Thornton Frwy., Dallas, TX 75203.

Bonobo's Name Honors Town

Take a gander at the newest addition to the Columbus Zoo and Aquarium: a baby chimp named Gander, after the Newfoundland town.

Unga, a nine-year-old bonobo ape (*Pan paniscus*) at the zoo, gave birth to a boy on 29 December, 2003. Zoo workers named the baby Gander for Gander, Newfoundland, because that's where Unga and some other travelers from the zoo ended up staying after the 9/11 terror attacks grounded their flight in 2001.

Unga was one of two bonobos being taken by zookeepers Beth Pohl and Harry de Geuyter to Columbus on 9/11/01 when their flight was diverted to Gander because of the terrorist attacks. The group stayed in Gander for six days.

More than any other living animal, bonobos resemble the ancestors of early humans, sharing over 98 percent of their genetic make-up with modern man. With less than 150 bonobos in captivity worldwide, the Columbus Zoo and Aquarium is one of only six zoos in the United States to exhibit this rare species, making this birth very significant for the species. The Columbus Zoo now has 14 bonobos, and currently, two of them are pregnant as well.

Sources: ZOONews Digest 281 Jan 11-20, 2004; Columbus Zoo News Release 1/15/04

(Editor's Note: Read Beth Pohl's account of her journey with Unga and Kosana in the May 2002 issue of *AKE*, pgs. 207-210.)

AAZK Announces New Members

New Professional Members

Richard Angubo, **Uganda Wildlife (Entebbe, Uganda, E. Africa)**; Nicole M. Hildebrand, **Zoo New England**; Timothy Singiser, **Zoo America (PA)**; Ruta A. Qureshi, **Leesburg Animal Park (VA)**; Elizabeth K. Timpe, Jonathan Miot, Kathryn Pease, Ricardas Sabeckis, Rytis Davjotas, Mindavgas Zebrauskas, Jesse Watford, Jebediah Fox, Teresa Sebring, Michelle Evarts, Janice Fortune, Shane Covteh, and Lynne Rogers, **ZooAtlantas (GA)**; Valerie Teets, **SeaWorld Orlando (FL)**; Tracie McNeilly, **Lion Country Safari (FL)**; Jennifer Blank, **Lowry Park Zoo (FL)**; Dawn Muncie, **Louisville Zoo (KY)**; Christy Nuss, **Columbus Zoo (OH)**; Dana E. Burke, Allyn Sewald and Dianna Lydick, **Toledo Zoo (OH)**; Erin Shorma, **Red River Zoo (ND)**; Kerry Dunham, **Lincoln Park Zoo (IL)**; Douglas Holmes, **Glen Oak Zoo (IL)**; Yukie Asano-Vong, **Sedgwick County Zoo (KS)**; Grete D. Brown, **Fort Worth Zoo (TX)**; Regina Lewis, **Moody Gardens (TX)**; Carey Streicher, **Abilene Zoological Gardens (TX)**; David Nickolaus, **Denver Zoo (CO)**; Briana Evarts, **San Francisco Zoo (CA)**; and Rebecca McCloskey, **Wildlife Safari (OR)**.

Renewing Contributing Members

Jane Woodward, Chester Zoo, England

Renewing Institutional Members

Lion Country Safari, Inc.

Loxahatchee, FL

Harold Kramer, General Manager

Henry Vilas Zoo

Madison, WI

Jim Hubing, Director

Caribbean Gardens

Naples, FL

David L. Tetzlaff, Director

Cedar Cove Feline Conservation Park

Louisburg, KS

William D. Pottorff, Director



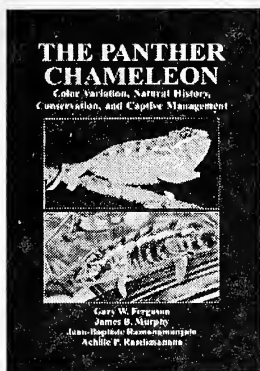
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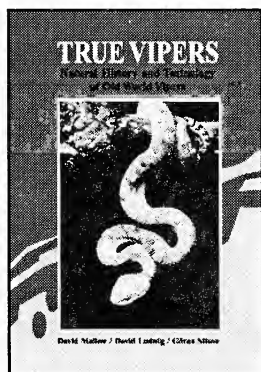
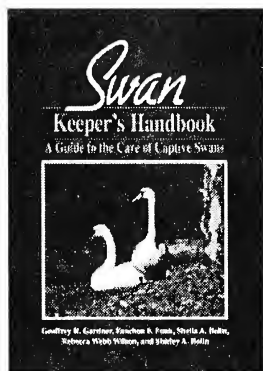


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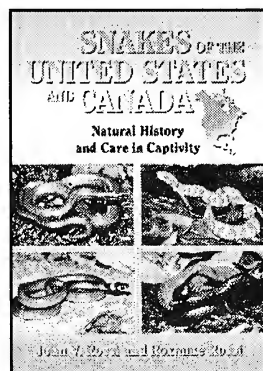


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Training Terminology—Part 1

*By Beth Stark, Chair
Animal Behavior Management Committee*

The Animal Behavior Management Committee joined forces with AZA to improve the list of training terms that we developed several years ago. This glossary is now being used by AZA in their management courses, Principles of Elephant Management, and Managing Enrichment and Training Programs. This spring, we will also utilize this list in the joint AZA/AZK course, *Advances in Animal Keeping*.

The list is not comprehensive but is meant to give animal keepers an understanding of the most commonly used training terminology. This should help to ensure that we are all “speaking the same language” and also increase each keeper’s understanding of these concepts.

Over the next several issues of *AKF*, the ABMC will provide a little more insight into some of the terms on this list, using examples to help illustrate each term. For more information on training programs, please click on the Animal Behavior Management Committee on our website at www.aazk.org.

Operant Conditioning – *A type of learning in which behavior is determined by its consequences. (A behavior is strengthened if followed by reinforcement [positive or negative] and diminished if followed by punishment.). The animal “operates” on the environment, leading to a desired outcome.*

Operant conditioning is often used in animal training. One of the benefits of this type of learning or training is that the animals are able to make choices and then live with the consequences of those choices. For example, if an animal is rewarded for touching its nose to a target pole, it will likely repeat that behavior in the future. The animal chose to approach the target and received the positive consequence of a reward. Humans use operant conditioning on a regular basis – for example, the saying that “we learn from our mistakes.” We learn, based on the consequences of our actions, not to repeat a behavior and, in fact, to change our behavior in order to avoid the undesirable consequences of making that mistake again.

Reinforcer – *Anything (either the application of a stimulus or the removal of a stimulus) that occurs in conjunction with a behavior that tends to increase the likelihood that the behavior will occur again.*

A reinforcer can be positive or negative —but still serves to increase the frequency of the behavior that is occurring.

Positive Reinforcement – *The process of following an action or response with something that the subject wants, thereby causing an increase in the frequency of occurrence of that behavior.*

A positive reinforcer is something an animal will work for. It can be a preferred food item, access to a desirable area, a cagemate, a rubdown, favorite toy, etc. Receiving a positive reinforcer (positive consequence to a behavior), an animal is more likely to repeat the behavior in the future. Positive reinforcement is prominent in human behavior as well. A pat on the back or a thank you can go a long way toward encouraging people to continue to do things that are appreciated by others. Money and favorite food items (if you eat all your dinner you can have ice cream for dessert...) are also examples of positive reinforcement and will encourage the subject to perform the corresponding behavior again.

Negative Reinforcement – *A process in which a response increases in frequency due to the removal of an aversive stimulus from the animal’s environment.*

Negative reinforcement can be a confusing term. It is important to remember that a negative reinforcer (like a positive reinforcer) strengthens a behavior. This happens because an animal will avoid something it does not want or like (aversive stimulus), such as a certain area, an animal or person herding it, a noise, etc., by performing a different behavior. A rhino can be trained to pick up its foot by tapping the back of the leg. The rhino performs the desired behavior (picking its foot up) by avoiding the aversive stimulus of the tap.

Behaviors that are trained using negative reinforcement can be maintained with positive reinforcement. Using the rhino example above, a verbal cue of “foot” can be paired with the leg tapping. Eventually, the rhino will become conditioned to the verbal cue and should pick its foot up on that cue alone. When it does, it can be rewarded with a favorite treat (positive reinforcer). The key to using negative reinforcement is that the aversive stimulus (tapping the leg) stops as soon as the animal changes its behavior toward the desired behavior (rhino lifts its leg). A dog pulling on a leash will learn to walk next to its owner to avoid feeling the tug on a leash.

Humans encounter negative reinforcers daily. Most of us try to avoid hearing the word “no”; we also fasten our seatbelts to stop the annoying beep. People might leave for work early to avoid sitting in traffic jams during rush hour.

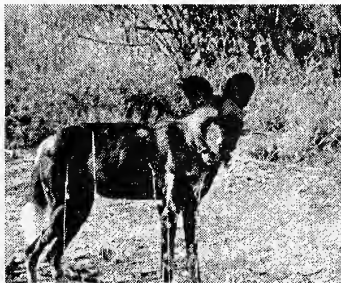
Punishment— *The application of a stimulus or the removal of a stimulus that occurs after a behavior it is meant to affect, and causes a decrease in the frequency of that behavior.*

Punishment is often confused with negative reinforcement. Because punishment occurs after the behavior, the animal is not given an opportunity to modify its behavior at the time. Negative reinforcement occurs with the behavior so that the aversive stimulus stops immediately as the behavior changes. This is not the case with punishment because the behavior has already occurred. For example, a dog that steals from the garbage is punished by being locked in a bathroom. It is unlikely that the dog will associate the punishment with behavior. Because the punishment occurs after the behavior, the dog is not given the opportunity to learn the appropriate behavior and may not understand that the punishment was applied to the particular behavior. It is possible that the dog will now associate its owner’s approach with being locked in the bathroom and might begin to cower or even show signs of aggression. Therefore, not only is punishment an inappropriate training tool, it often does not lead to the desired result.

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REACTIONS

A Question and Answer Forum for the Zoo Professional on Crisis Management

*By William K. Baker, Jr., Curator
Little Rock Zoo, Little Rock, AR*

Question

My institution is considering buying new firearms for potential crisis situations. What is the current trend?

Comments

The current trend is a shift towards purchasing heavier caliber firearms, specifically rifles. It's my belief, that while 12-gauge shotguns were the financially expedient choice; many zoos are now shifting towards rifles. Many institutions still favor the 30-06 Springfield for its reliability, familiarity, and the broad selection of ammunition, and with the right ammo it can be effective in use against the vast number of animals in a collection during a crisis.

Still, the .375 H&H is by far the most popular all-around choice, which really shouldn't come as a surprise, since historically it is the preferred choice of Professional Hunters in Africa. Two calibers of note these days are the .338 Winchester and the .45-70, both of which are really solid performers and offer significantly larger bullets than most calibers. Bolt-actions are still the first choice, but the .45-70 in a lever action is remarkably fast in the right hands and easy for smaller shooters to use.

Question

I have heard that when buying a firearm for crisis management situations that you should purchase the largest caliber possible, is that the case?

Comments

Not necessarily, when purchasing a firearm for crisis applications in zoological institutions or wildlife facilities, there are two points to remember. One, always purchase the most that your staff members can shoot comfortably and accurately. By that I mean, if you have a large caliber rifle and the staff finds it uncomfortable to shoot, you should expect "flinch" problems and as a result, reduced accuracy.

Two, firearm selection should always be based on collection demographics. If you have a number of thick-skinned larger specimens, then a larger caliber is probably best. Conversely, small soft-skinned specimens would require a lighter caliber. Still, caliber is inconsequential if you use sub-standard ammunition. Ideally, I recommend premium safari-grade ammunition.

Question

Our facility is looking to purchase capture nets, who do you use?

Comments

There are numerous companies that now offer capture equipment, especially nets. All of the companies make fairly solid and reliable products, but to answer your question I use Furhman Diversified nets. They can be reached at:

Furhman Diversified, Inc.
2912 Bayport Blvd.
Seabrook, Texas 77586

281-474-1388
www.fieldcam.com

Question

Do you have any recommendations for pigeon control in a zoo environment?

Comments

I recommend a spring-action air gun in .177 caliber. I have had good luck with Beeman, RWS, and Walther products. Also, I recommend that you only implement a control program of this nature when your facility is closed to the public for PR reasons.

Question

This really isn't a crisis question, but more of general safety, in your experience what is the best item to use for footprints of animals?

Comments

I prefer using non-toxic children's finger paint, such as Crayola® brand paints. I always look for the non-toxic stamp on the package and wash it clean with a towel and water when finished. I would recommend that you review use and get approval from your attending veterinarian first before trying it out at your facility.

Question

What is the best resource for gunsmithing supplies?

Comments

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Next Month: How critical is communication to a crisis or daily operations?

**If you would like to submit a question for this column or have comments
on previously published materials, please send them to
AAZK, Inc., 3601 S.W. 29th St., Suite 133, Topeka, KS 66614 Attn: Reactions/AKF**

(About the Author: Since 1985 Bill has been active in the fields of science, zoology, and wildlife management. His education and experience include a B.S. in wildlife management and post-graduate studies in zoology, Lab and Museum Assistant, Shoot Team Leader, ERT Member, Large Mammal Keeper, Senior Keeper, and Zoo Curator at various zoological facilities. His area of research is crisis management in zoological institutions, which draws upon practical experience and training as a Rescue Diver, Hunter Safety Instructor, NRA Firearms Instructor, and Red Cross CPR/First Aid Instructor.)

Weight Gain and Growth in Captive Juvenile Giraffes (*Giraffa camelopardalis*)

By

Roger Reason, Senior Keeper

Ed Laird, Senior Keeper

Brookfield Zoo, Brookfield IL

One of the best ways to monitor the progress of young animals is by weighing them regularly to determine if they are growing normally. However, this requires access to known weights to use as a basis for comparison and there is little published information on this subject regarding giraffes (*Giraffa camelopardalis*) (Reason and Laird, 2002). Therefore, this paper was compiled to provide a preliminary database on weight gain and growth rate for juvenile giraffes. Weights were obtained from ISIS ARKS records along with records from Brookfield Zoo and records generously provided by Cheyenne Mountain Zoo, Utah's Hogle Zoo and Zoo Atlanta.

Average weights for juvenile giraffes were calculated at monthly intervals. Juveniles are defined here as individuals that are still growing even though they may have already reached sexual maturity. Individual weights were assigned to the nearest month for these calculations. The averages for three-month intervals from birth to age nine are shown in Table 1 and the averages for bi-monthly intervals from birth to age 10 are shown graphically in Figure 1. No data is available for some age intervals and many have small sample sizes which may result in such anomalies as older animals seeming to weigh less than younger ones, however, some interesting insights are still provided.

Giraffes of both sexes start life at similar birth weights and experience their most rapid growth rate prior to about two years of age. Their weight at this age has increased to 8-9 times their neonatal weight. After two years of age their growth rate slows somewhat but remains approximately the same for both sexes until they reach 4-5 years old at which time their weights have increased by 30-40% from age two.

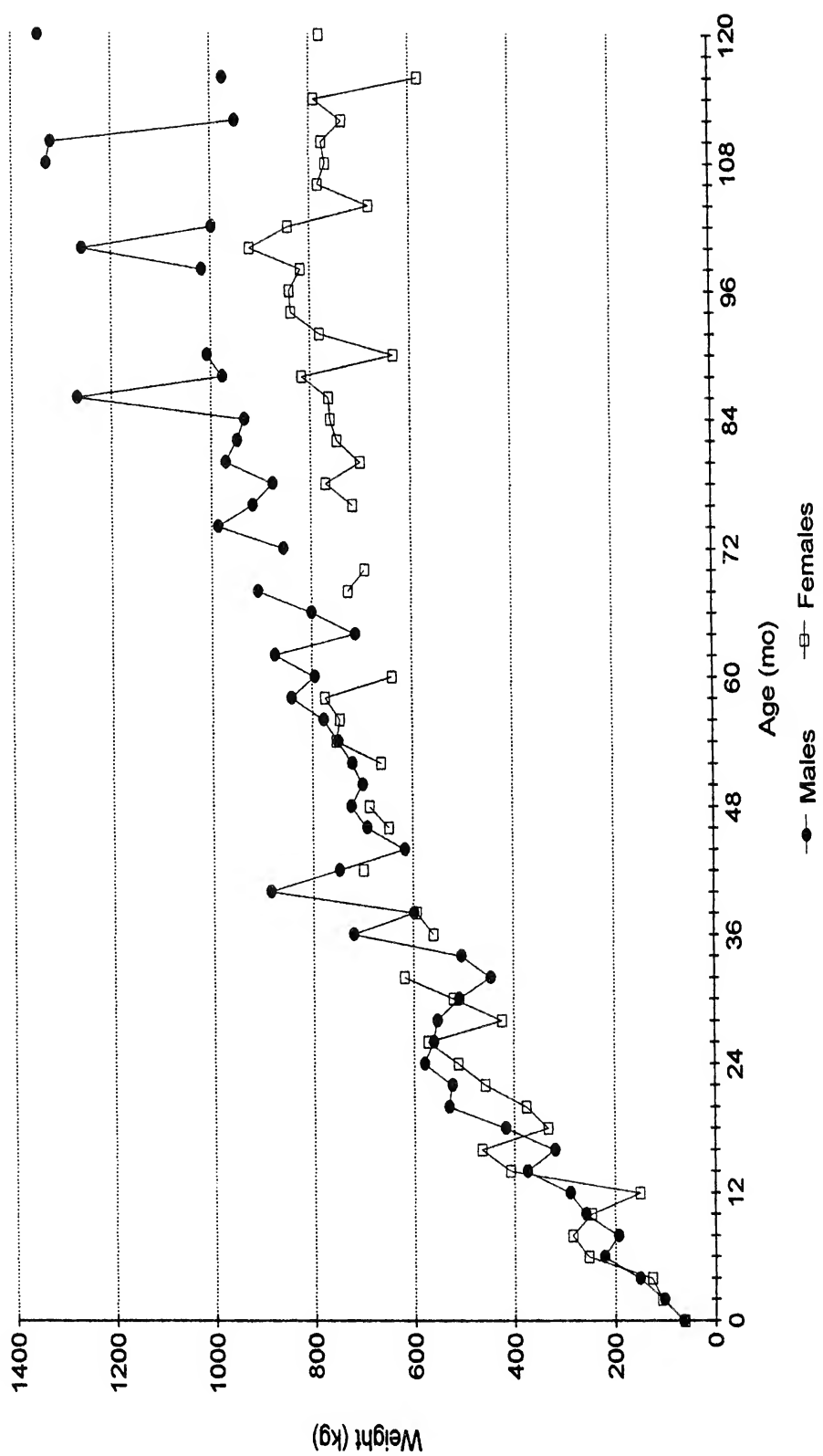
At this point the sexes begins to diverge. Males continue to grow at about the same rate, gaining at least an additional 30% in weight before reaching full size at around seven years of age. Females also continue to grow until they are approximately seven years old, however, in contrast to the males, their growth rate slows down again, and their weight increases by a total of less than 10% after age 4-5.

Overall, giraffes appear to grow at a much slower rate than other ungulates. Both the okapi (*Okapia johnstoni*) and the desert bighorn sheep (*Ovis canadensis*) reach 7-8 times their birth weight by six months of age (Reason, 1991; Hansen, 1965). Moose (*Alces alces*) calves gain 13 times their neonatal weight in this same time period (Verme, 1970) and elk (*Cervus canadensis*) calves post a seven-fold increase in birth weight within 7-8 months (Houston, 1982). By comparison, giraffes attain only 3-4 times their birth weight in six months, and, as mentioned above, do not reach eight times their birth weight until around two years of age. This agrees with the results of a study done on various African ruminants (not including giraffes) showing that growth rates are systematically related to adult body size with larger species having a relatively slower growth rate than smaller ones (Geordiadus 1985).

Table 1. Average weights (kg) for juvenile giraffes (*Giraffa camelopardalis*) at three month age intervals.

Age (mo)	Average for males	Number of animals	Average for females	Number of animals
0	64	34	61	25
3	138	11	124	5
6	221	9	253	2
9	228	8	254	3
12	289	9	215	3
15	324	3	411	2
18	417	2	332	3
21	505	2	447	3
24	579	4	511	2
27	519	3	604	1
30	509	3	520	1
33	574	6	589	1
36	720	2	559	2
39	843	3	585	3
42	748	4	699	1
45	690	2	----	0
48	723	3	686	2
51	702	4	718	2
54	749	4	752	2
57	776	4	696	1
60	795	1	639	2
63	800	2	----	0
66	801	2	----	0
69	841	1	748	2
72	856	1	----	0
75	844	3	694	1
78	877	4	770	2
81	874	2	732	1
84	932	2	----	0
87	912	2	782	2
90	1008	1	633	2
93	1030	1	783	2
96	----	0	841	3
99	----	0	802	2
102	998	1	843	3
105	----	0	704	1
108	1330	1	768	3

Figure 1. Weights for juvenile giraffes (*Giraffa camelopardalis*) at bi-monthly age intervals.



In most sexually dimorphic ruminants males grow for a longer period of time than females (Verme, 1970; Houston, 1982; Halls, 1984; Wilson, 1984; Georgiadis, 1985) thereby accounting for much of the adult size differential. However, the results here show both sexes of giraffes increasing in weight until they reach the same age range of around seven years old and most of the discrepancy between the sexes in adult weight resulting from a differing growth rate after age 4-5. Nowak (1999) states that male giraffes attain full size at age seven and females at age five which is not in agreement with these results, but this may be due to the relatively small and perhaps easily overlooked weight gain by females after age 4-5. Dagg (1971), however, notes that giraffes continue to grow in height until they are seven or eight years old, which is consistent with the findings here regarding weight and lends support to the evidence indicating that giraffes differ from the general ruminant pattern in this aspect of their growth and development.

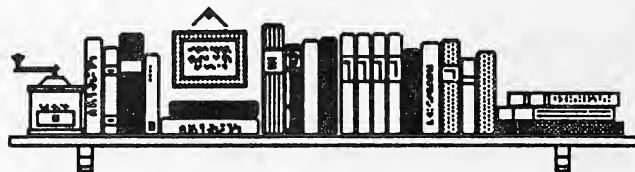
The authors hope that the information presented here will provide some basic weight guidelines which may be useful in monitoring the progress of future generations of giraffes and would appreciate receiving any further information on growth rate in juvenile giraffes from other zoos.

Acknowledgements

The authors would like to thank Tracy Leeds from the Cheyenne Mountain Zoo, Deana Walz from Utah's Hogle Zoo and N. Bouwens from Zoo Atlanta for providing information on giraffe weights from their institutions; and Nancy Bent for comments and suggestions on earlier versions of the manuscript.

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Book Review

The Ark in the Park, The Story of Lincoln Park Zoo

By Mark Rosenthal, Carol Tauber and Edward Uhler.

Published in 2003 by University of Illinois Press

1325 South Oak Street, Champaign, IL 61828-6903, U.S.A.

ISBN 0-252-07138-7 Soft cover \$24.95

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194 pgs. w/illustrations

*Review by Phil King, Zoo Foreman
Assiniboine Park Zoo
Winnipeg, Manitoba, Canada*

Although the title of this book may have been used before (The Ark in the Park by Wilfrid Blunt, published by Hamish Hamilton in London in 1976) there is nothing of the copycat about it. The earlier one dealt with the sesquicentennial of the London Zoo, and this newer one does at least as well with the history of Chicago's Lincoln Park Zoo – a period only 15 years shorter. One of the partners in this triumvirate of authors, Mark Rosenthal is, in addition to being Curator of Large Mammals at Lincoln Park, a zoo historian of long standing. The attachment of his name to this partnership ensures (without in the least detracting from the abilities of the other two) that his love and knowledge of zoo history is well-reflected in the accuracy of zoological facts in this remarkable publication. He also makes a very decent acknowledgement to, amongst others, the late Ed Almandarz who, as he says, was his zoo mentor and exposed him to the rich history of the zoo. Where are the people like that today? There is a remarkable number of acknowledgments by the obviously grateful trio, and that's nice to see.

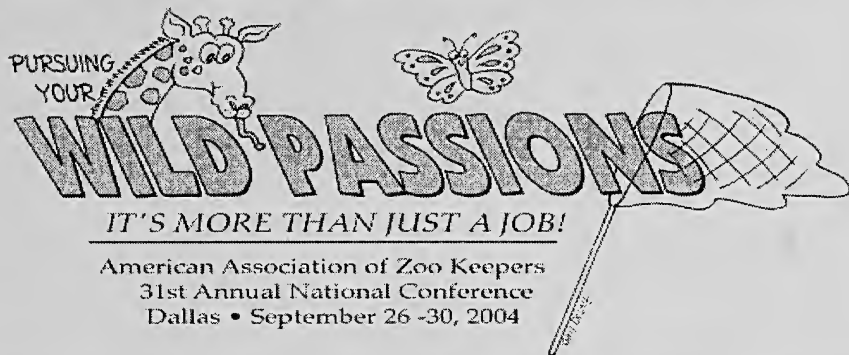
Liberal supplemented with a large number of well-chosen illustrations, the work deals not only with the 135-year history of the Lincoln Park Zoo, but wisely begins with the story of the foundation of the park itself, reaching back very much earlier – to the 1830's in fact. One's imagination is certainly nudged by the thought-provoking images of dealing with the interments of thousands of bodies in this one-time cemetery, many having died from infectious diseases such as cholera and smallpox, with all of the attendant problems of flooding, poor hygiene and the lack of refrigeration. The wise decision to change the focus of this area to one of recreation and diversion must have been a welcome one at the time, and has certainly been supported by the populace, as well as zoo professionals, since then.

The actual date of foundation of most zoos of the time, evolving as they did as adjuncts and natural additions to the parks in which they were located, is often subject to interpretation. The authors refer to that and do a good job of putting it into perspective. One thing though, comes through very clearly, and that is that the Board of Commissioners of Lincoln Park was extremely fortunate to have had remarkably well-suited and experienced animal men close at hand to manage the zoo, even if it was not always fully appreciative. It might be appropriate to wonder if the zoo would have fared as well if the likes of Cy DeVry and Alfred Parker, men who had learned their trade from the ground up and who were often called upon to perform or assist with animal handling procedures, had not been there to build the solid foundations on which later directors like Floyd Young and Marlin Perkins were able to work with such successful advantage.

Like many zoos operated by municipal governments, Lincoln Park Zoo has undergone significant changes in ownership and management style, many of these not without stress and hardship to its employees. Perhaps wisely, these issues are only dealt with by mention. This book, a celebration of the life of one of the oldest and most well-regarded zoo in the U.S., is not the place to address such issues as these, and it would take a delicate hand indeed to do so without turning it into a distasteful exposé. There's a place for that perhaps, but it's not here.

I suppose that it's fair to say that the Chicago zoos could be regarded in some ways as having something of a pioneering spirit. Brookfield Zoo broke some ground in 1936 with the keeping of Giant Pandas – no-one else had had any before, and unless you believe that a dress designer found

FIRST CALL FOR PRESENTATIONS!



The theme for this year's conference is "Pursuing Your Wild Passions." We are looking for papers, posters, workshops or round tables that include inspirational or motivational aspects of the zoo keeping profession. Presentations involving all taxons are desired. Topics of interest include husbandry techniques, training, enrichment, education, exhibit design, conservation, research, and professional development.

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Abstracts should be limited to one or two paragraphs. Abstracts must include in detail the significance of the topic to be presented along with the results, conclusions or benefits of the work described. The relevance of the presentation to the conference theme should also be included. Poorly written or incomplete abstracts will be returned!

DEADLINE FOR ABSTRACTS: JULY 1, 2004

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Send abstracts by e-mail to jboylan@mail.ci.dallas.tx.us

Or, submit two(2) copies of the abstract to:

Jeanette T. Boylan
Dallas Zoo
650 South R. L. Thornton Fwy.
Dallas, TX 75203

Adam's Mark Hotel Dallas
400 N. Olive Street ~ Dallas ~ Texas 75201
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CONFERENCE NOTES AND UPDATES

WEBSITE

For more information about the conference check out our website at:

www.dallaszoo.org

Questions? Call (214) 670-7436 or email annreams@yahoo.com.

SPONSORS

The conference is a very costly production and we would appreciate any AAZK Chapter or group that would be willing to sponsor an event such as a break or hospitality night. Or, if you would like to make a donation to help cover expenses, it would be greatly appreciated. For more information contact Bonnie Hendrickson at Chimps: (214) 243-2336.

EXHIBITORS TABLES

There is space in the Exhibitor's Hall for Chapters or groups interested in selling or displaying their products or causes. Cost per table:

\$50.00 for non-profit groups such as an AAZK Chapters or TAGs,

\$100.00 for profit groups such as wildlife artists, suppliers, etc.

Please contact Ann Reams at annreams@yahoo.com.

TRAVEL INFORMATION

The official conference airline is American Airlines. Discounts vary from 5% to 10% depending on how early you make your reservations. The Dallas AAZK group code number is S0594AL. Avis will also discount auto rentals if you mention you are flying with American. Each coded reservation will help to bring dynamic speakers to your conference.

TEXAS STATE FAIR

Catch Steve Martin's Bird Show at the fair! Half-price tickets for the Fair are available if you pre-pay through us. Add this cost to your registration fee and the ticket will be in your welcome packet.

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The destinations for 25-26 September are Cameron Park in Waco and Fossil Rim in Glen Rose.

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Start taping your animal videos now! There will be showings nightly in the Hospitality Suite.

AUCTION ITEMS

If you are bringing an item, it would be great if you could send it early to: Dallas AAZK, c/o Dallas Zoo, 650 S. R. L. Thorton Freeway, Dallas, TX 75203.

a baby one up a tree on her first trip to China, there was no expertise to tap into. Lincoln Park broke similar ground with Gorillas – first Bushman and later Sinbad. Yes, people had tried before, but with little success, and the present level of expertise in the keeping of both these species is largely due to the pioneers at both these institutions, and in no small measure due to, and I'll say it again, good common-sense animal men. The issue of gorilla-catching and the methods used are rightly considered as repugnant today, but we should not forget that without them there would in all likelihood not have been many opportunities to develop the skills that zoos around the world now have.

A couple of points to ponder – reference is made to the arrival of a condor in 1874. What are the chances that it might have been a Californian, I wonder? Secondly, when referring to the retirement in 1931 of Alfred Parker as the zoo's second director, the statement "The zoo's view of a first-class animal collection retained something of the old-style postage-stamp mentality – all birds in one house, all felines in another....." implies that this is incorrect and improper. It needs to be stated that taxonomic-themed animal exhibits are not wrong or bad. They just do not fit in with the current architecturally-designed displays which many zoos seem only too willing to embrace to the virtual exclusion of any other concept. Such exhibits and buildings are not necessarily wrong, just different from what is fast becoming the everyday norm. Now granted, we're talking about 1931, but still....

I found the book easy to read – large enough to easily accommodate the interesting text and wealth of fascinating photographs to which the authors were lucky enough to have access. It is provided with a liberal index and a quite thorough bibliography – something often missing in such publications – and has the air of being a caring and sensitive history. It pulls no punches, however, and is remarkably honest in some issues. As something of a zoo historian myself I find it pleasing that attention is given in such an all-round sense. If you are familiar with zoo histories, you will enjoy this book. If you have yet to read one, you'll find this as good a place as any to start. I would like to thank the AAZK administrative staff for the privilege of being given the opportunity to review this most worthwhile publication.

Swan Keeper's Handbook: A Guide to the Care of Captive Swans

By Geoffrey R. Gardner, Fanchon F. Funk, Sheila A. Bolin, Rebecca Webb Wilson, and Shirley A. Bolin
Original Edition 2003 ISBN 1-57524-199-4
Krieger Publishing Co., 1725 Krieger Drive, Malabar, FL, 32950
Hardcover, 150 pages, \$44.50

*Review by Sheila Barriou, Keeper IV
Audubon Nature Institute
New Orleans, LA*

The authors of this book started the Regal Swan project after conducting initial research and lineage of the swans at Orange Lake, FL. It was during this initial research that they realized standardized

This book was written to serve as a guide to swan care by nonveterinary persons in captive settings. Following a brief introduction, the book goes into 15 chapters covering history, feeding, breeding, pairing, predators, habitat development and maintenance, and overall care of swans. There are many color photos included in each chapter as well as captions for each of the photos.

While the captive setting for most of this book is large lakes or ponds surrounding golf courses, hotels, motels, and resorts, the techniques described are easily adapted to the smaller captive setting that exists in most zoos and private collections. The mute swan is the primary species that the authors focus on, but the last chapter does cover the other six species of swans and hybrids. The appendix gives the statutes and regulations regarding exotic animals for all 50 states. The authors do strongly advise swan keepers to check their local state laws due to legislation changing on a regular basis. A glossary and index are also included as well as a substantial list of references.

While I found this book to be well researched and informative, some of the information will be redundant to the well-seasoned swan/waterfowl keeper. That being said I also feel this is a good reference book for a waterfowl library because it easily lends itself to the quick reference for clarification or anecdote.

Chapter News Notes

Nashville Zoo AAZK Chapter

The Nashville Zoo Chapter of AAZK continues to grow by leaps and bounds, both in members and in projects, and we had an extremely eventful 2003. We continued our trend of donating several thousand dollars to different organizations, both locally and globally. Noteworthy are:

Through specific donation boxes located throughout the zoo, and through 50% of donations received through our Spiral Wishing Well, we were able to donate \$2400 to the zoo's Clouded Leopard Project in Thailand. We also donated, through funds from the wishing well, nearly \$850 to a similar project in The Phillipines that supports ecosystem conservation.



Our ever-popular Junior Zookeeper program (where students 10-14 years old can volunteer for 3 hours certain weekend days with keepers, and learn what it takes to do what we do) garnered just over \$1500 dollars, which we donated to Tennessee Parks and Greenways. This organization is dedicated to preserving the beauty of Tennessee by creating an interconnected network of state parks, greenways and wild areas from the Mississippi River to the Great Smoky Mountains.

We held our first "official" Beastly Bowl-A-Thon in September, and had a hugely successful night, hosting over 40 bowlers, and bringing in \$1400, which we donated to the Institute for Ecological Research (Instituto de Pesquisas Ecologicas, or IPE) in Brazil, and their tapir project. We encourage everyone to check into this worthwhile organization at their website, www.wpti.org/ipe.htm. The bowl-a-thon also

received many gracious donations from area merchants, which were given out as doorprizes and to bowlers who brought in the most funds, got the highest scores, and so on. A great time was had by all!

We began an ink cartridge recycling project, and sold beautiful Christmas wreaths for a couple of fundraisers. We also purchased \$260 worth of enrichment items for various members and their animals, and started a member initiative to pay for partial membership dues into AAZK for new members.

We sponsored 4 guest lecture series, ranging from galliwasps to otters to basics of animal training. We also continued with our Adopt A Highway project, sponsoring 2 miles of Nolensville Road that runs in front of the zoo and picking up trash.

We also held elections in December. New officers for 2004 are:

President.....Loretta Werner
Vice President.....John Farley
Secretary.....Shannon McKenzie Duprel
Treasurer.....Caroline VonBrecht
Liaison.....Tori Mason

We look forward to an equally eventful 2004!

...Tori Mason, Chapter Liaison

Columbus Chapter AAZK

We just had a great year with our newly elected officers:

President.....Shelly Roach
Vice President.....Mike Zedekar
2nd Vice President.....Adam Felts
Secretary.....Laura McGlottin
Treasurer.....Audra Gibson

We set out to shake things up a bit last year. We did several fundraisers and a membership drive. We worked very hard to get some more money into our account in order to have a bit more flexibility and more room to expand.

We got involved in several new fundraising events and have a couple more ideas up our sleeve that we are itching to try. With the help of the Cleveland AAZK Chapter, we held our first reverse raffle and it was a big success with \$2,764.00 raised...Thanks, Cleveland AAZK!!

We also had photos with Jack Hanna. Unfortunately the poor weather lowered our normal income for this event to \$312.71...Thanks, Jack!!

Then we raised \$4,461.93 for Bowling for Rhinos - great job, Laura!! The last of our fundraisers for the year was our Wings and Suds event that raised \$225.00.



We also sponsored several big projects this year:

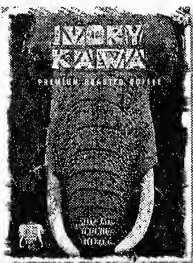
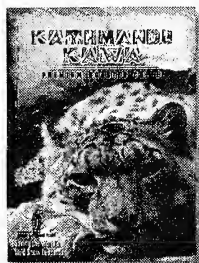
- We helped sponsored the 2003 AAZK Conference.....\$1,000.00
- We split up funding and sponsored four keepers attendance at the International Zoo Keeping Congress.....\$1,000.00
- Support for Drill Ranch Staff to secure property for the future.....\$1,000.00
- Patches for Drill Ranch Staff.....\$300.00

We do have a list of other recycling and fundraising projects that we have yet to make happen. But this year does look promising, and we look forward to telling you about all our successes at the end of 2004.

What's your AAZK Chapter been up to? Send your Chapter News to the Editor at:
akfeditor@zk.kscoxmail.com

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ABC's: Animal Behavior Concerns and Solutions

A Question & Answer Forum for Animal Professionals

©2004 by Diana Guerrero, Independent Behavior Consultant
Ark Animals of California, Big Bear Lake, CA



Interspecific Alloparenting, Mixed Species Exhibit Interactions, & Project Update

Request for Information

In many animal facilities there are unique animal interactions, or animal relationships that vary from the normal prey-predator relationships, avoidance behavior, or negative exchanges between species. Popular anecdotes outside of animal organizations include polar bears and dogs, squirrels and cats, birds and dogs, a lioness and wildebeest, and others.

Over the past few years, zoos have expanded their mixed species exhibits. Educational animal firms and private agencies raising exotics often create diverse environments and encourage interactions between species creating more opportunity for behavioral variations.

I've witnessed chimpanzee and elephant interactions, dog and big cat associations, and a variety of other interesting pairings. During discussions on what jargon related to the rearing of other species by surrogate mothers the term, "interspecific alloparenting" was adopted. The dialogs expanded into a radio show topic last year, and now the behavioral anomalies are being discussed for a television show.

I am seeking anecdotal observations or documentation related to species interactions that vary from the norm. If you have witnessed such interactions, or have them within your current exhibit or facility, please contact me with the species involved, ages of the animals, and circumstances surrounding the interactions.

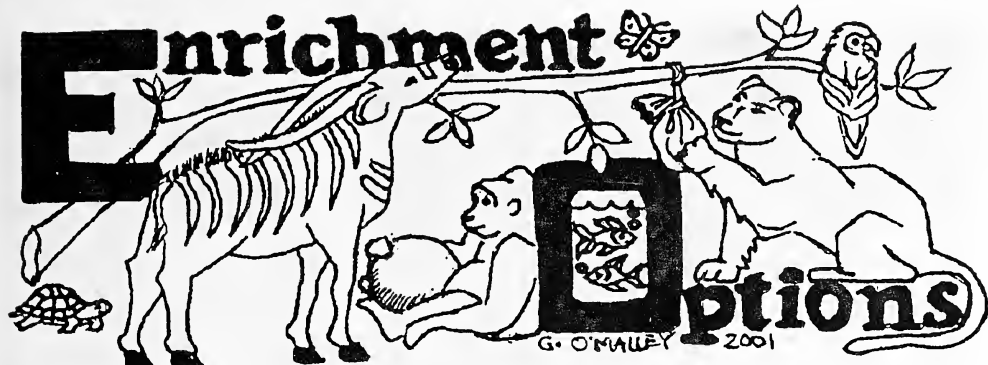
As always, submissions remain confidential.

UPDATE: Alternative Therapy Project

Regretfully, the alternative therapy behavior project did not move forward as anticipated. Thanks to those of you who volunteered to participate.

Next month: Zebra Behavior

(About the columnist: Since 1978 Diana L. Guerrero has worked professionally with both wild and domestic animals. Guerrero has been affiliated with and certified by a variety of animal programs in the USA and Europe. Based in California, she writes, consults, and leads safaris. Information on her animal career programs, training courses, and her newest book, *What Animals Can Teach Us about Spirituality* (SkyLight Paths, 2003) are available through her website. Questions for ABC's should be submitted to Diana directly through the ABC's questionnaire on her website, via email zooit@arkanimals.com, or through regular mail: c/o ARKANIMALS.COM, PO Box 1989-215, Big Bear Lake, CA 92315 USA.)



*EO Editors - Dawn Neptune, Utah's Hogle Zoo
and Rachel Cantrell, Disney's Animal Kingdom*

Enrichment Activities for Giraffe

By

*Tina Fridman - Animal Keeper
Disney's Animal Kingdom
Lake Buena Vista, FL*

Disney's Animal Kingdom currently houses 0.5 reticulated giraffe. Here at Disney's Animal Kingdom we use the S-P-I-D-E-R model to help guide us through the enrichment process. By following the S-P-I-D-E-R (Setting Goals, Planning, Implementing, Documenting, Evaluating, and Readjusting) framework, we are able to maintain consistency in our enrichment initiatives and follow specific steps in order to ensure that our enrichment ideas meet their goals. For more information on the "spider framework", refer to www.animalenrichment.org. Below is one example of an enrichment device we have developed for our giraffe.

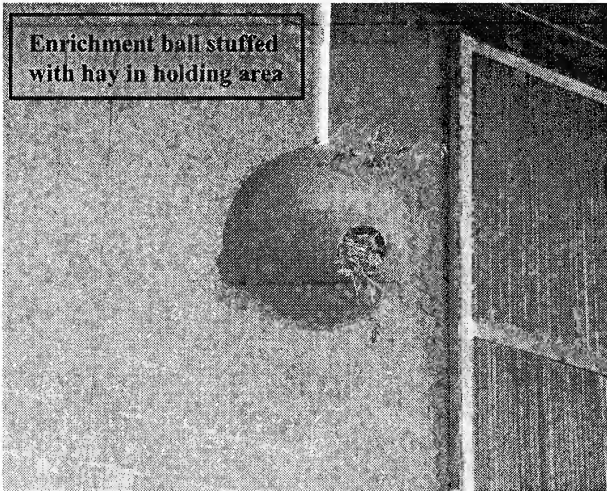
THE ENRICHMENT BALL

We devised an enrichment ball for the giraffe to interact with in their off exhibit area. The ball was designed to encourage foraging behavior. The ball has been a huge success. It was easy to make as well as being inexpensive.

Supplies needed:

- 1- big plastic ball
- 1- Nine-foot piece of 1 1/2-inch PVC pipe
- 2- 3/8 inch by 2 1/2-inch carriage bolts with nuts
- 1- 35 foot piece of 5/16-inch rope
- 1- 1 1/2-inch PVC male adaptor
- 1-Clip
- 2- 5/16-inch pulleys
- 1- 1 1/2-inch PVC cap
- 1- 1 1/2-inch coupling

To construct the enrichment ball, we used a 36-inch diameter plastic ball that had five four-inch diameter holes placed in various locations. A 1 1/2-inch hole was cut into the top of the ball to attach the hanging device. We attached a nine-foot, 1 1/2-inch PVC pole to the top of the ball using a 1 1/2-inch PVC male adaptor and 1 1/2-inch threaded PVC cap. One of the four-inch pieces that were leftover from cutting the holes was used as a washer. The male adaptor was placed on top of the ball through the hole and then the "washer" was placed inside the ball to allow the adaptor to go through it, the PVC cap was placed inside the ball under the washer and screwed into the adaptor.

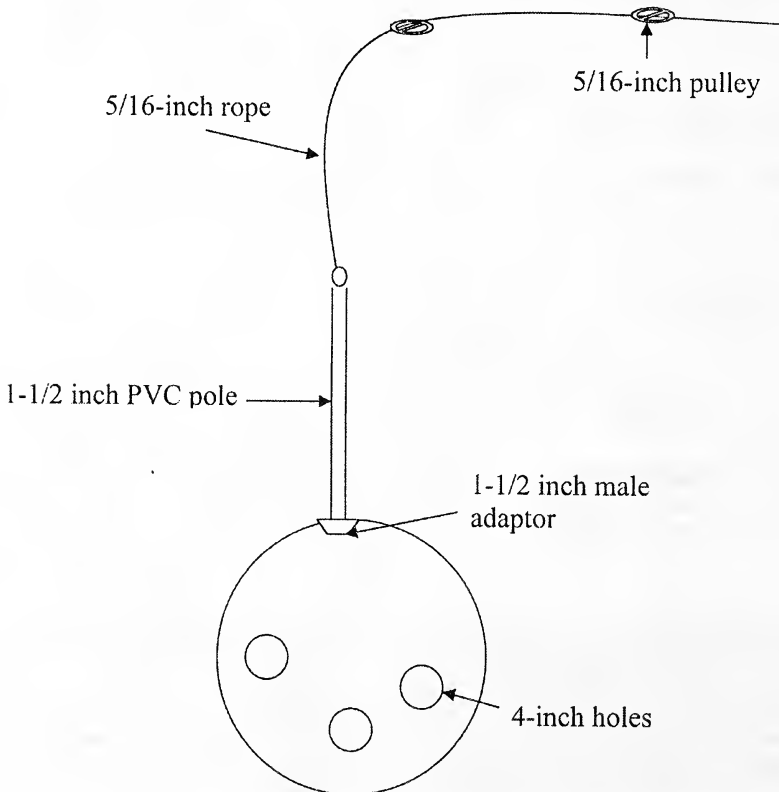


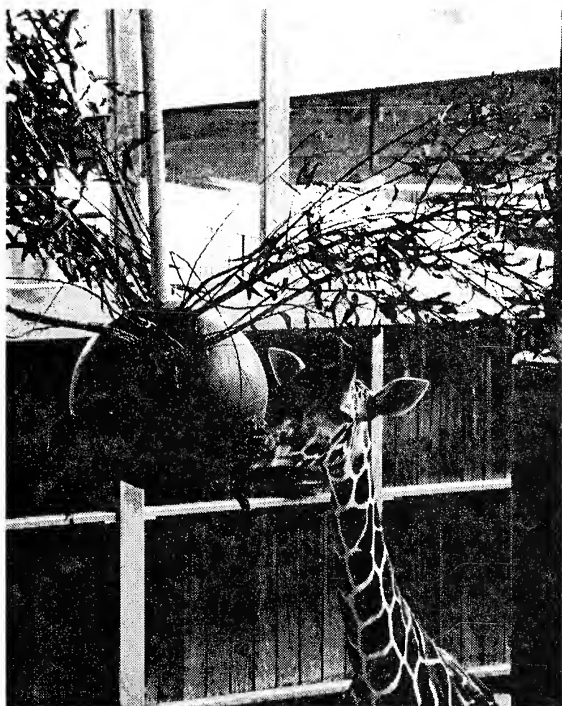
The nine-foot PVC pole (1 1/2-inch) was then attached to the adaptor on top of the ball using glue. We attached one of the carriage bolts horizontally through the adaptor and the pipe as a safety measure to prevent the ball from accidentally dropping. We attached a rope (5/16 inch) to the other end of the PVC pole. This was done by gluing a 1 1/2-inch PVC coupling to the top of the pole for extra durability. The other carriage bolt and nut was placed horizontally through the coupling and the pipe. The ball was suspended by the rope that goes through two pulleys, which were attached to the ceiling of the outside holding yard. The

giraffe are unable to reach the rope. The pulleys allow us to raise and lower the ball easily from outside the holding yard. We attached a nut and bolt at the end of the rope so the rope will not go all the way through the pulley.

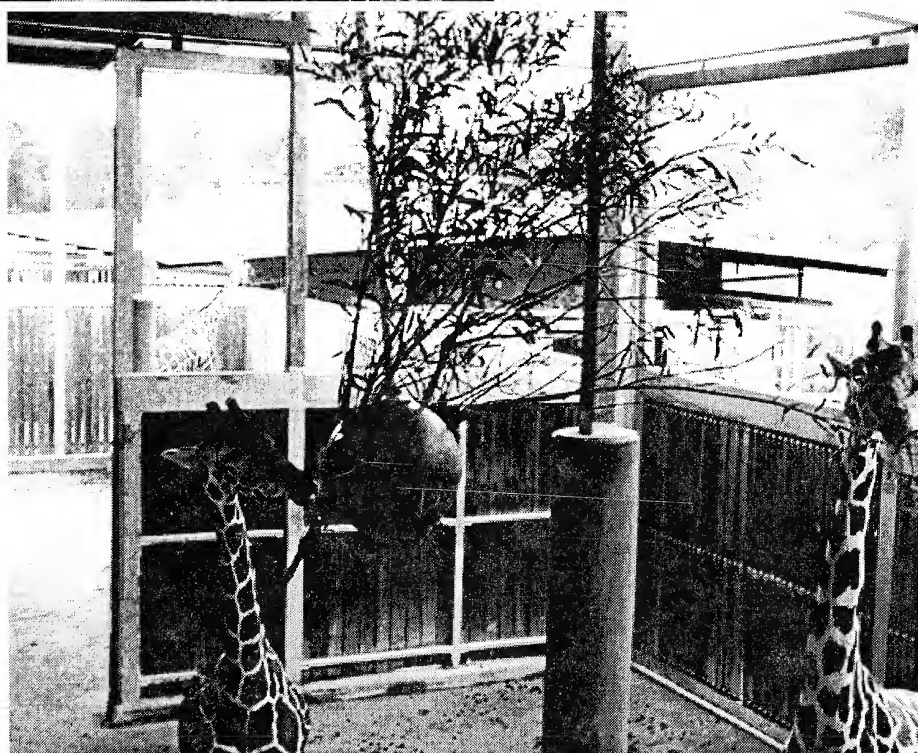
The ball is filled through the four-inch diameter holes. We stuff the ball with alfalfa hay, various leafy greens, browse, and other treats. Obtaining the food items from the ball is a challenge for the giraffe since the ball constantly swings or moves when the giraffe pulls food from it.

Giraffe Enrichment Ball





At left and below:
Enrichment ball in off-exhibit
holding area. Ball is filled
with alfalfa and browse.



(Ideas appearing in this column have not necessarily been tested by the editors for safety considerations. Always think ahead and use good judgement when trying new ideas. You are invited to submit materials for the Enrichment Options Column. This might include recipes, toys, puzzle feeders, olfactory enrichment ideas, etc. Drawings and photos of enrichment are encouraged. Send to: AKF/Enrichment, 3601 S.W. 29th St., Suite 133, Topeka, KS 66614-2054. Eds.)

HEX Stations for Old World Fruit Bats: A Solution to Feeding-Territoriality in Captive Flying Foxes

By Mark Chag, Brian Pope, Erich Trumbly
Disney's Animal Kingdom, Lake Buena Vista, FL

A potential breakthrough in the successful management of Old World fruit bats has arrived. Although they live in colonies, most *Pteropus* species are territorial animals that defend both daytime and nighttime roost sites aggressively. Our observations show that captive *Pteropus* species return to the same feeding territory nightly. What's more, we've seen bats roost alongside certain individuals during the day, while not tolerating the same individuals in their feeding territory at night.

At Disney's Animal Kingdom (DAK) we developed a system that maximizes a zoological institution's enclosure space and reduces aggression while the bats feed. We call it a 'HEX' station. It is a ceiling-fastened mechanism from which the daily diet is provided that increases the number of locations in which bats can establish feeding territories. Providing a HEX station for bats greatly increases feeding sites without enlarging the enclosure dimensions. Simultaneously, it provides a solution to disrupting established bat feeding territories while enabling all bats in a collection to find a sufficient site to roost. The HEX design is simple in nature, while complex in the array of beneficial management results in any *Pteropus* husbandry program. Additionally, we designed the HEX with animal keepers in mind, making them quick and easy to clean which minimizes workload requirements.

HEX is simply an acronym of the basic shapes we've designed for each of the three feeders. Both an 'X' and an 'H' shaped station were installed six months ago at DAK and have been utilized continuously by our bats. An 'E' shaped station has yet to be installed, though we feel it will have equally successful results. Not only a solution to solving feeding territoriality and limited enclosure space, the stations also double as an excellent enrichment device. Materials are inexpensive and the benefits to the bats are extensive.

The Need for a HEX

At DAK we currently maintain a single sex collection of 20.0 Malayan flying foxes (*Pteropus vampyrus*) and 6.0 Rodrigues fruit bats (*P. rodricensis*). During the daytime hours the bats are in a large habitat with roughly 4000 square feet of ground area with ceilings suspended 24 feet in the air. The bats are trained to shift nightly into an off-exhibit holding facility (see Fig. 1) that is roughly 1000 square feet and are fed in an indoor climate-controlled building that is 525 square feet.

Old World fruit bats establish territories according to a hierarchy within the group both in their natural habitat as well as in captive settings. Typically our larger and stronger bats display aggression, often overt, to establish a desired territory. Bats that tend to be on the receiving end of the aggression frequently have difficulty establishing adequate roost sites. This is a particular challenge when feeding. Bats guard their established territory around a feed station and prevent other bats from entering the area. Therefore enough feed stations must be provided so that each bat is able to establish a roost site not only where each is able to hang without harassment but also where there is food. Often times a bat effectively establishes a roost site where he is not receiving aggression but where there is no food. The simple solution to this problem for keepers is to move a food bowl to the bat's pre-established territory. Moving a bowl of food is effortless on a keeper and much easier on the bat. Because roost sites do periodically change, maintaining a close observation on bats when feeding is crucial to their well-being. We have observed that a bat will still shift nightly into holding and roost in a territory without food repetitively without attempting to establish a new location near food. Such an individual is an opportunistic feeder that eats only after other bats have

left their feeding stations, thus depriving the individual of choice food items. To humanize this scenario, imagine yourself as a child seated next to a sibling who constantly took the steak and potatoes from your plate, even your ice cream dessert, and left you each night with nothing but cold asparagus in front of you. You'd eat it because you were hungry, but had you had a chair out of arms-reach of your sibling, you would have enjoyed the entire meal as well. Moving food bowls to

accommodate an established territory is a necessary husbandry technique that is not completely corrected by HEX stations, but certainly aided.

The HEX Inspiration

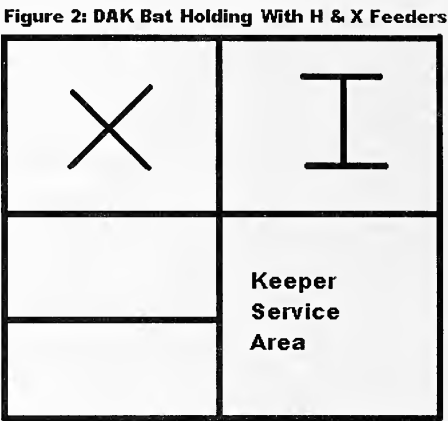
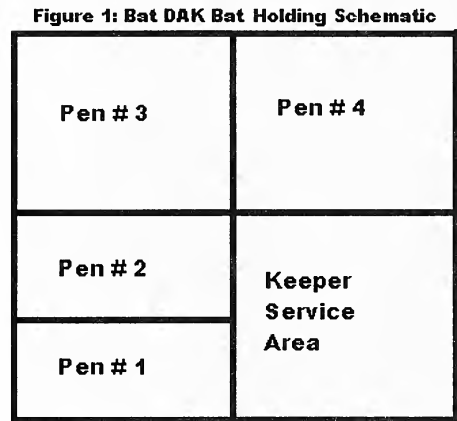
Although nearly three times larger than the *P. rodricensis*, the *P. vampyrus* in our collection have traditionally been governed by the aggression asserted by the smaller species. Because of its size, *P. vampyrus* is slower and less agile than the *P. rodricensis*. We believe that this contributed to the ability of *P. rodricensis* to establish large territories and defend a large amount of feed stations. Four adjacent pens constitute our holding building (see Figure 1). The entire collection has access nightly to three of the pens. The smallest pen is restricted and used only when a bat requires temporary isolation from the group. For the first several years since acquiring the bats, all but one of the *P. rodricensis* voluntarily roosted together in a single pen. The exception was the individual that received the highest amount of aggression from the rest of the *P. rodricensis*. This individual (whose house name is Donatello) instead chose to roost in the largest and adjacent pen where the majority of *P. vampyrus* also roosted. Although he could not establish a roost site among the rest of his own species, he was able to successfully roost right in the middle of the *P. vampyrus*. This presented another challenge. As mentioned previously it is easier to move a food bowl to an established territory than it is to motivate a bat to change its territory. However, Donatello was roosting in the middle of the pen. Because bats are inverted, food bowls need to be placed in an elevated position. As a result, they need to be fastened

to something. The walls of our holding building are covered in mesh enabling us to place bowl holders anywhere around the perimeter of the pens. This restricts all feeding territories to the walls and renders the large area in the middle of each pen useless at feeding. Such was the case with Donatello. He established a territory in the middle of a pen, surrounded by bats feeding along the walls, and there was no wall for a food bowl for Donatello. We solved this problem by attaching a small piece of mesh vertically from the ceiling exactly in his roost site. A food bowl was placed on one side and a water bowl on the other. With this station in place Donatello now had a feeding station all his own. But what if instead of a piece of mesh we hung a structure that was solid, with mesh on both sides? Then we could put food and water on both sides and make not one but two feed stations in close proximity. The bats would be only inches away but wouldn't be able to see the

other, thereby eliminating the aggression, and enabling both to feed. Hence, the HEX concept was born on a notepad with the two rough sketches (photographed at left).

The HEX

The HEX station is a PVC reinforced apparatus, with mesh sides attached, and visual barriers between two mesh layers that together when constructed and installed adds multiple feeding locations to a bat habitat. Both the 'H' and 'X' shaped stations installed at DAK offer four additional feeding locations each to our pens where there were none before. The 'E' shaped station could potentially provide an additional five feed locations. By adding additional barriers around the perimeter even more feed stations are possible. A HEX is attached to the ceiling of the pens with a piece of PVC that supports the structure from the floor. This support piece is crucial to the design. Even if the ceiling is strong enough to support the weight of a HEX station, the support also offers an escape route should a bat in a corner of a feed location be pursued by another bat. Because the visual barrier prevents eye contact, several bats can roost and feed within close proximity of each other with the impression of an established territory. This reduces aggression within a group and enables more bats to establish legitimate feeding roosts.

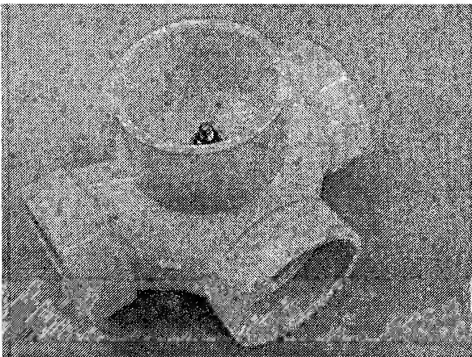
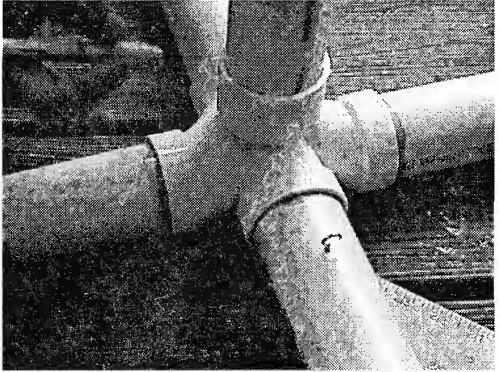
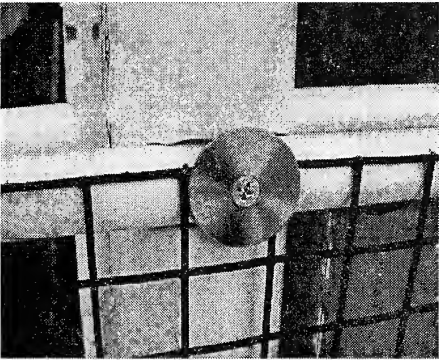
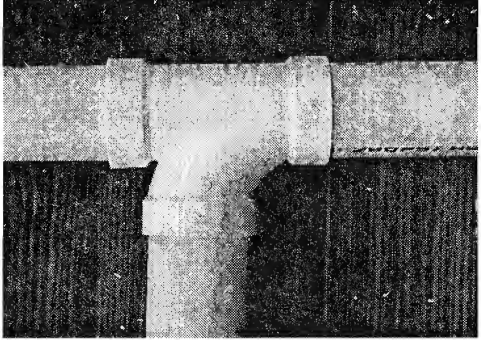


How to Cast a HEX

There are only a few basic principles involved in a HEX station. How it is built is up to you. Here we will examine the process by which the HEX stations at DAK were constructed and are intended only as a guideline should the reader wish to duplicate our methods. The basic principles that should be incorporated are as follows:

- 1) The dimensions of a HEX must be several inches longer than the largest species in your collection measured from head to toe. In other words, a bat roosting at the feed station must not be able to look below the bottom of the station to the other side. The same concept is incorporated with cubicles in an office building. While sitting at your desk you cannot see into the next cubicle. This same idea should be used in a HEX so that while roosting in one territory, a bat cannot view another bat in an adjacent territory.
- 2) A HEX should prevent visibility between adjacent feed stations. In other words, simply hanging mesh vertically from the ceiling will not work because the bats can see through it and will encircle it to defend a territory.
- 3) A HEX should have a means by which food can be distributed on all sides. In the case at DAK, mesh covered all sides so that the bowl holders could be placed on the mesh.
- 4) A HEX requires a centrally located support pole that allows a bat to crawl down if cornered by another bat.
- 5) A HEX should have no sharp points/ridges (e.g. from the edges of the mesh) because the bats are likely to rub on and scent-mark the apparatus.

The HEX is designed for institutions that have similar husbandry protocols to that which we have at DAK. This means a protocol by which the bats are fed their primary diet in a location that is not visible to patrons. If your institution feeds bats in the same location where they are viewed by patrons, a HEX feeder could potentially be themed to meet the standards of your exhibit. At the same time the HEX may, however, decrease visibility by providing a structure for the bats to hide behind. Since the bats at DAK shift into an off-exhibit holding area at night where they are fed, we have the ability to use non-themed HEX stations without concern of visibility. Additionally, because a HEX station is tainted daily with feces, it subsequently needs to be cleaned daily. We hose our HEX stations while the bats are away in the exhibit. If your institution feeds bats in the exhibit, it may not be feasible to clean a HEX feeder without inflicting additional stress on the animals. The authors feel that a HEX can be made with inexpensive materials while meeting all USDA requirements. Our initial prototype was constructed with some surplus pieces of mesh and a few wood boards we had in storage and could conceivably have served the same purpose as our final result described below. With the above in mind, the following is a generalized description for casting a HEX for your bats.



HEX Components

Materials:

The following dimensions were constructed only to accommodate our largest species (*P. vampyrus*). Therefore, a HEX built to accommodate smaller species obviously requires fewer materials since dimensions vary according to species size in each institution. Although designed for *P. vampyrus*, the feed stations work with equal success with the *P. rodricensis* which is only approximately 1/3 the size of the *P. vampyrus*. All measurements are given in inches/feet as they would be listed in all American supply stores vs. the metric measurements.

H Station:

- Visual barrier: 16 square feet
- Box wire mesh 1x1": 40 square feet
- 2" PVC schedule 40: 29 feet
- 3/4" PVC schedule 40: 39 feet
- One 2" PVC slip coupling
- Four 2" 90° PVC elbows
- Two 2" PVC tees
- 12 small stainless steel hooks
- About 100 stainless steel washers and an equal number of 1/2-inch stainless steel screws

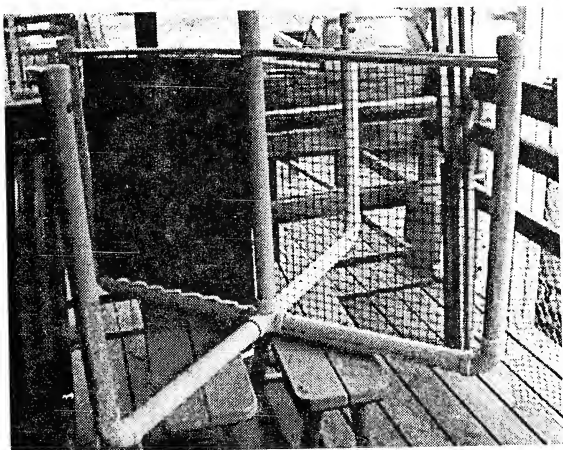
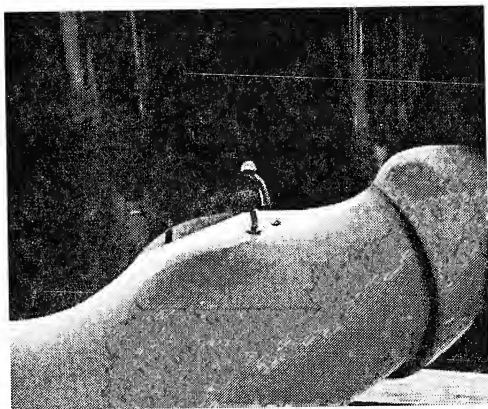
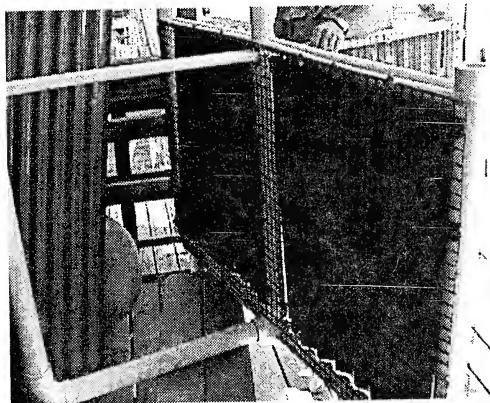
E Station:

- Visual barrier: 20 square feet
- Box wire mesh 1x1": 50 square feet
- 2" PVC schedule 40: 37 feet
- 3/4" PVC schedule 40: 46 feet
- One 2" PVC slip coupling
- Three 2" 90° PVC elbows
- Two 2" side outlet PVC elbows
- One 2" PVC side outlet tee
- 15 small stainless steel hooks
- About 100 stainless steel washers and an equal number of 1/2-inch stainless steel screws

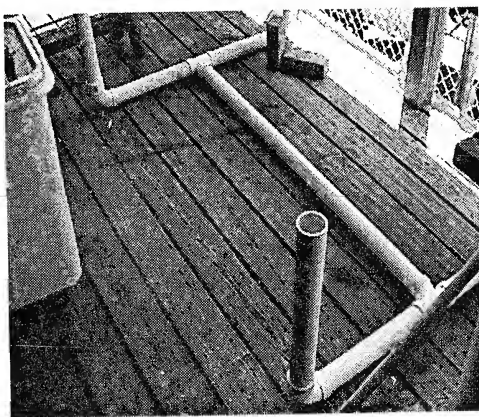
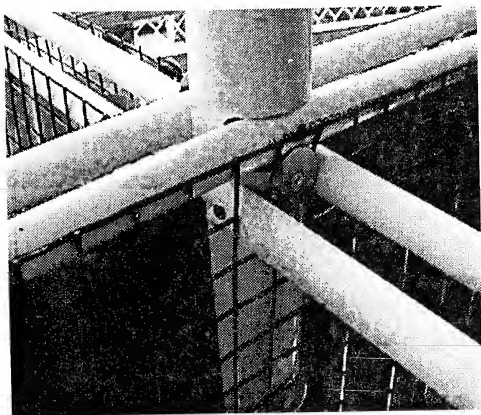
X Station:

- Visual Barrier: 12 square feet
- Box wire mesh, 1x1": 37 square feet
- 2" PVC Schedule 40: 12 feet
- 3/4" PVC Schedule 40: 7.5 feet
- Four 2" PVC 90° elbows
- One 2" PVC cross
- 12 small stainless steel hooks
- About 100 stainless steel washers and an equal number of 1/2 inch stainless steel screws
- One 2" PVC slip coupling

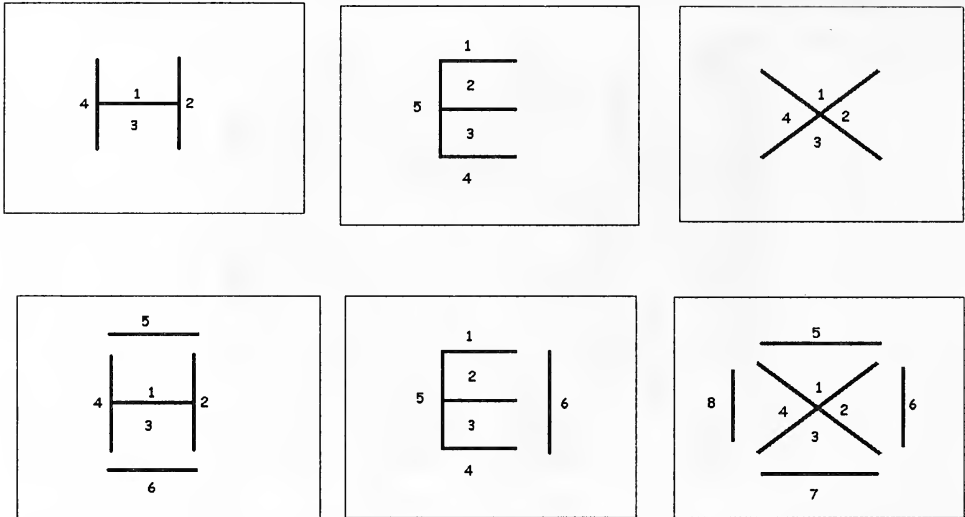
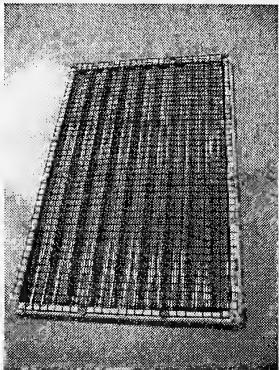
Construction: PVC cement is used to attach all PVC connections. Mesh is attached with both stainless steel washers and screws. Vinyl roofing provides the visual barrier between layers of mesh. A support in the center of each station braces the structure to the ground. The station must also be attached to the ceiling of the enclosure to reinforce stability.



HEX Construction Process

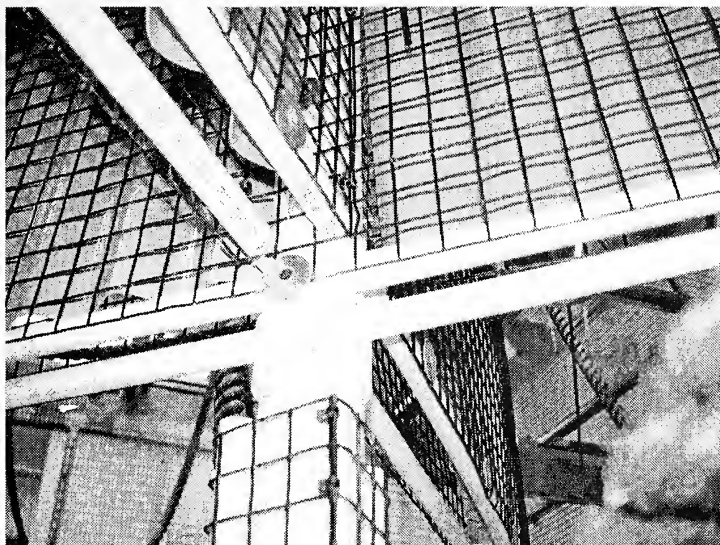
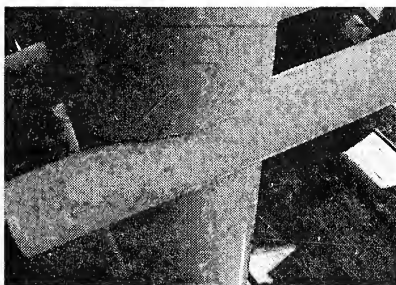


Perimeter Barriers: Adding additional barriers surrounding the perimeter of a HEX station can add even more feed stations. Depending on your situation, barriers may provide further adequate roost sites or prevent bats from entering a HEX altogether. When we initially installed our HEX stations, barriers were simultaneously added. Our observations showed that the HEX stations combined with the barriers may have been “too much, too soon.” Therefore the barriers were removed only a day after installation with the intent of replacing them once the bats fully adjusted to the HEX stations. Therefore, if you plan to install a HEX in an area where bats have predetermined roost sites, it may be a good idea to first provide the HEX, and follow up later with barriers if needed. Below are schematics demonstrating additional roost sites that could potentially be provided by barriers added to HEX stations. Perimeter barriers are simple in design. A simple rectangle of PVC with the two mesh layers and enclosed visual barrier constitute the entire apparatus. The design (pictured at right) is the same as any one section of any HEX feeder.



The Split-Bottom Design:

By far the most challenging aspect we encountered when building the HEX feeders was the split-bottom design. Without this feature the HEX would be considerably easier to construct. We used this design to ease keeper workload by facilitating cleaning. Because mesh encloses the shade structure on both sides, it was conceivable that food, feces, etc. would likely get caught between the mesh and visual barrier when dropped by the bats. Therefore, we developed the split bottom to enable any debris falling between the mesh to simply fall to the floor. Additionally, if the bottom was solid and the visual barrier rested on the bottom it would only increase the time (and frustration) needed to clean the HEX. A split bottom does not provide a base for the visual barrier, therefore our design requires the barrier to be suspended from the top by stainless steel hooks so that it literally dangles between the mesh panels.



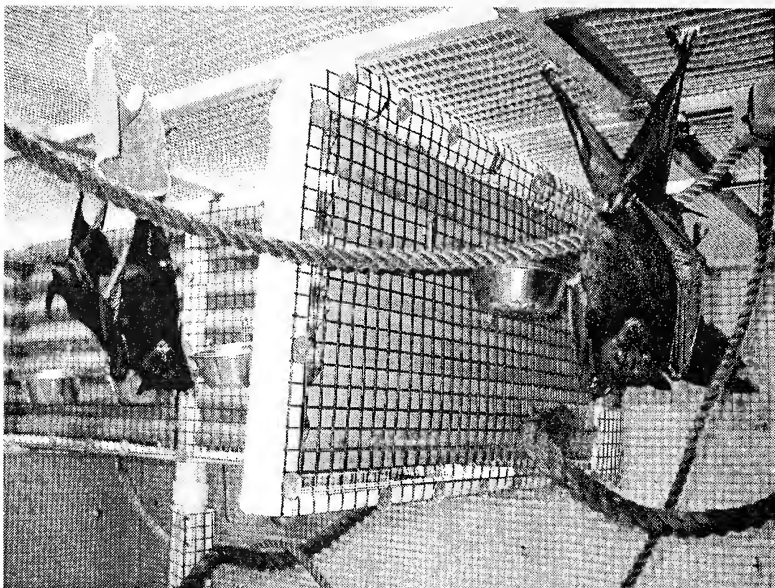
HEX-ENRICHMENT

Initially, newly installed HEX stations will act as an enrichment device unto themselves. They can be further utilized as an enrichment tool as well. Browse, scents, food items, scent-marking cloths, and countless other items can be placed on various locations around a HEX. We have seen that our bats will mark their territory by scent-marking the HEX itself. Ropes attached to and from the HEX to other areas around the building provide additional roost sites and escape routes as well.

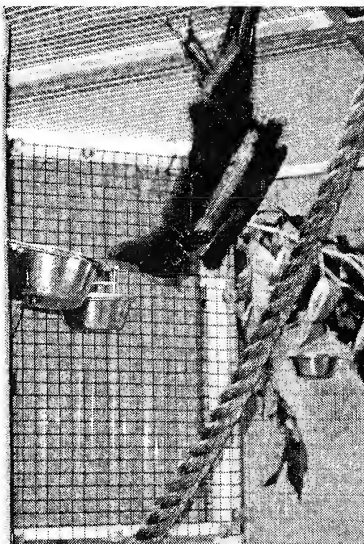
HEX Results:

The idea of a multiple feed station to decrease feeding aggression is one that we pored over for some time before actually implementing. Our original collection of bats arrived at DAK in October 1998. In the summer of 2002 we added bats to the collection for the first time. An additional 2.0 *P. vampyrus* and 4.0 *P. rodricensis* were acquired. Since established territories covered most of the area available in our holding building, we decided that with the introduction of the new bats we should introduce the HEX stations as well.

On only the third day after the HEX stations were installed, our observations documented that each station in both the 'H' and the 'X' feeders were being utilized (keeping in mind that an 'E' feeder was not installed). By the fourth day, seven bats were observed with established territories at the HEX feeders and remained there until morning. On the eleventh day our records show that diet was heavily consumed from all stations and in most cases the bowls were licked clean. Finally, on the thirteenth day even one of the newly arrived *P. vampyrus* had established a territory of his own in the 'X' feeder. Now, nearly a year later, the feeders remain in place and are utilized nightly by a large portion of the bats in our collection.



Bats utilizing HEX Stations



We hope that the HEX system can help your bat husbandry program and your bats as well. Please contact us if you are interested in more details or a step-by-step manual on how to build a HEX. You may have a bat in your collection that never has the opportunity to eat that choice piece of fruit because it must wait for other bats to leave a territory before it can feed. Or you may have a bat that is not able to establish an elevated roost site. Or perhaps you have a collection of bats constantly suffering from lacerations caused by feeding-time aggression. You may even have a bat that is only able to eat what other bats drop to the floor. A HEX feeder might solve all those problems. Aggression will always exist in any captive collection of bats, but then again, hopefully so will solutions to it.

If you have questions, you may contact Erich Trumbly at DAK via email : Erich.Trumbly@disney.com<

Legislative Update

*Compiled by Georgann Johnston
Legislative Advisor
Sacramento, CA*



\$14 Million in Federal Grants to Native American Tribes for Conservation Projects

Interior Secretary Gale Norton announced in late January that the United States Fish and Wildlife Service (USFWS) is awarding 79 grants, totaling nearly \$14 million, to help 60 federally recognized Indian tribes conserve and recover endangered, threatened and at-risk species and other wildlife on tribal lands. The USFWS is awarding the grants under two new programs: the Tribal Landowner Incentive Program (TLIP) and Tribal Wildlife Grant Program (TWGP). These programs are similar to cost-share programs recently developed by the department to assist states, local communities, private landowners and other partners undertake wildlife conservation projects.

"Native Americans have a unique relationship to and understanding of the land and its wildlife," Norton said. "As part of the President's overall Cooperative Conservation Initiative, the Interior Department is providing these grants to build on our partnership with the tribes to conserve tribal land and recover the wildlife, especially those species that are in decline."

Of the \$14 million, the USFWS is providing about \$4 million to federally recognized Indian tribes to help fund 23 projects under TLIP. Contributions from tribes and other partners raise the total value of these projects to \$6.8 million. The grants were chosen through a competitive process to address protection, restoration and management of habitat to benefit at-risk species, including federally listed endangered or threatened species and proposed or candidate species. The maximum award under this program is \$200,000 with a required minimum 25-percent match from non-federal funds.

Meanwhile, about \$10 million will help fund 56 projects under TWGP. Contributions from tribes and other partners increase the total value of these projects to \$12.4 million. These grants are awarded to federally recognized Indian tribes to benefit fish, wildlife and their habitat including non-game species. Although matching funds are not required for these grants, they are considered to be an indicator of a tribe's commitment. The maximum grant award under this program is \$250,000.

"Indian peoples were North America's first stewards," said USFWS Director Steve Williams. "For generations, they have lived close to nature, depending on wildlife for economic, cultural, and spiritual fulfillment. The Service, through these two special grant programs, will strengthen its conservation partnerships with tribes across the United States on behalf of traditionally important wildlife species and their habitat." Native Americans and Native American tribes have a controlling interest in more than 52 million acres of tribal trust lands and an additional 40 million acres held by Alaska native corporations.

Examples of TLIP and TWGP grants awarded include:

(1) The Eastern Band of Cherokee Indians of North Carolina will use its \$200,000 TLIP grant to undertake a multi-year comprehensive survey of plants and vertebrate aquatic and terrestrial fauna found on the reservation, resulting in a new Natural Heritage database to benefit species of concern. People will be able to use this new information to develop resource-management plans for individual species at risk, to conduct environmentally sensitive land-use practices, and to plan future commercial/residential development.

(2) The Lac du Flambeau Band of Lake Superior Chippewa Indians of Wisconsin will use its \$120,330 TWGP to establish, restore, and maintain a harvestable lake sturgeon population in the Lac du Flambeau Chain of Lakes and the Bear River. Lake sturgeon is culturally significant to this Tribe and economically important to the State of Wisconsin.

(3) The Passamaquoddy Tribe-Indian Township Reservation of Maine will use its \$180,700 TLIP grant to survey and assess populations of the Canada lynx, gray wolf, eastern cougar and other forest carnivores of great spiritual, cultural and economic importance to the tribe.

(4) The Shoshone and Arapahoe Joint Council of Wyoming will use a \$190,900 TWGP to help meet the wildlife management challenges on the Wind River Reservation. The Council is particularly concerned about how best to manage large predators such as grizzly bears and wolves. It also wants to create a sage grouse/sage brush management plan. *Source: USFWS Press Release 27 January 2004*

European Union and Some Asian Countries Suspend Import of Pet Birds

The Standing Committee of the Food Chain and Animal Health, representing member countries of the European Union, have agreed to a proposal to immediately suspend the importation of pet birds from a number of Asian countries. The decision is an attempt to exclude any possible risk for avian influenza virus occurrence in quarantine stations in the member states. Imports have been suspended from Cambodia, Pakistan, Indonesia, Japan, Laos, Hong Kong, China, South Korea, Thailand and Vietnam.

The importation of birds other than poultry is authorized from all member countries of the World Organization of Animal Health, subject to animal health guarantees provided by the country of origin and strict post-import quarantine measures in the EU member states. No bird can leave quarantine without a negative lab test for avian influenza.

In 2003 approximately 100,000 birds, mainly psittacines, had been imported to the EU from the countries now blocked, mainly from Pakistan, China and Indonesia. Avian influenza is a highly contagious viral infection of poultry which, depending on the species, can cause major losses to the poultry industry. It is known that wild waterfowl present a natural reservoir for these viruses and can be responsible for the primary introduction of infection into domestic poultry.

In Singapore and Japan, importation of a variety of live birds kept as pets, along with a variety of exotic meats, have been banned from importation into the country. Again, the bans are based on a growing list of countries reporting outbreaks of the potentially lethal H5N1 strain of bird flu. South Korea has added sniffer dogs at immigration health inspection points and installed 400 disinfectant mats at its sea and air ports that kill germs on the shoes of travelers.

Likewise, Australia has imposed efforts to stop people from bringing in potentially tainted gourmet food and souvenirs, in addition to live birds. *Source: European Commission Press Release 28 January 2004 and Reuters Press Release 27 January 2004*

Elephant Camp Received Mixed Reports

Working elephants in India are to be sent to a "rejuvenation" camp for 45 days each year where they will receive medical care, nutritional attention, exercise and play time. They will then be returned to their "jobs" working for the government, temples, individuals and ashrams.

In 2003, the Chief Minister of Tamil Nadu (a region of India) declared that camps for the elephants had been successful and that the 45-day vacation would become an annual event. Not everyone agrees with the minister's assessment, however, since a "public interest litigation petition" (lawsuit) was recently filed to force governmental adherence to the Prevention of Cruelty Against Animals Act of 1960. In response, the Minister claimed that the benefits of the camps have been praised by visitors and conservation groups who perceive them as a way of restoring the physical and mental health of elephants held in captivity.

Backers of the lawsuit say that many of the 2,971 elephants attending the camps sustained injuries and suffered ill treatment, particularly during their transportation to the camp location. *Source: The Hindu News Online 15 December 2003*

Big Cut Proposed for Endangered Species

President Bush has proposed to slash the budget for endangered species recovery by 14%, a nearly \$10 million cut in ESA programs that conservationists contend will drive imperiled plants and animals "closer to extinction" reports *SFGate.com/AP*. With ESA funding "at the lowest level since the

president took office,” Interior Secretary Norton maintains the “cuts are offset by major increases in grant programs” meant to encourage private landowners as well as state and local government to undertake voluntary conservation measures. While these incentives programs are important for protecting habitat, Defenders of Wildlife countered that they shouldn’t come “at the expense of the basic, bare-bones, skeletal implementation of the act.” *Source: GREENlines Issue 2038 2-4-04*

State Rejects Developer Pressure

A Wisconsin state legislative panel has voted to move forward with a plan to provide special protection for Butler’s garter snake, rejecting pressure from developers to remove the imperiled snake from the state list of endangered and threatened species reports the *Milwaukee Journal Sentinel*. Removal of the snake from the list for economic rather than scientific reasons would have set a major precedent. For its part the Department of Natural Resources promised to “compromise with the builders association by offering to prioritize individual habitats and make relatively insignificant sites easier to develop.” *Source: GREENlines Issue #2037 2-3-04*

30 ESA Success Stories Profiled

In celebration of the 30th anniversary of the Endangered Species Act a coalition of groups working to defend imperiled species have released fact sheets profiling 30 species “that would most likely be extinct but for the protections afforded by the law” says *U.S. PIRG*. Because of continued loss and degradation of habitat, invasive species and other escalating threats many of the profiled plants and animals continue to require ESA protection and the factsheets “demonstrate that numerous species are making steady progress toward recovery that would otherwise be impossible without the ESA.” The complete set of 30 factsheets are available at <http://www.uspirg.org/esa> . *Source: GREENlines Issue #2024 1-14-04*

Wolves Reaching Carrying Capacity

Montana’s head wolf biologist contends that the wolf population “in and around Yellowstone N.P. is probably reaching its limit, and as the numbers in their prey base decline, so will the numbers of wolves” reports the *Billings Gazette, AP*. The northern Yellowstone elk herd is at its lowest level in 30 years and throughout Montana the elk population is “shrinking in some areas with lots of wolves and grizzly bears,” forcing wolves to disperse to new areas, although most will “stick to mountain country.” *Source: GREENlines Issue #2023 1-13-04*

Two More Mexican Wolves Found Dead

Two more endangered Mexican gray wolves have been found dead in the past two weeks, the alpha female from the Bonito Creek Pack and a female from the Francisco Pack reports the *Albuquerque Journal*. While the USFWS acknowledges that the deaths are a setback, 13 wolves have been found dead in New Mexico and Arizona since March of 2003, they point out that the population as a whole is growing with 20 pups born last year and that other wolves are joining the depleted packs. The Center for Biological Diversity, however, contends that USFWS management is partly to blame and that one of the wolves found dead was “the third member of the pack to die after they were captured and relocated” because they strayed outside of the recovery area. *Source: GREENlines Issue #2036 2-2-04*

Desperate Measures Leave Five Pronghorn Dead

Five of seven Sonoran pronghorn died from capture-related stress in a “desperate attempt to bolster the last remaining U.S. population with transplants from Mexico” reports the *Arizona Daily Star*. With the U.S. population down to just 20 animals, the USFWS recovery team maintained “they have no choice but to try such inherently risky operations” to establish a captive breeding program from the Mexican population which numbers between 300 and 400. While Defenders of Wildlife is supportive, they contend that “transplants in and of themselves won’t save the pronghorn” because grazing, cross-border traffic, water diversions and habitat fragmentation continue to threaten the species. *Source: GREENlines Issue #2031 1/26/04*

Two Decades Left for Orangutan

The World Wide Fund for Nature (WWF) reports that new figures show that the number of orangutans has fallen from 45,000 to 60,000 in 1987 to between 25,000 and 30,000 by 2001 reports the *Independent, UK*. The orangutan is currently found in the wild only on the islands of Sumatra and Borneo where deforestation and hunting are “taking such a toll that, within two decades, the orangutan

is likely to vanish from the wild in the only two places it still lives.” While all of the great apes are “increasingly endangered” the orangutan is especially vulnerable because of they are an island species and are solitary animals with a low reproductive rate that “simply does not allow it to sustain the spectacular rates of decline” now being seen. *Source: GREENlines Issue #2024 1-14-04*

New data on the rate of deforestation has confirmed the prediction that, unless action is taken to reverse the decline, Sumatran orangutans are likely to be the first great ape to become extinct in the wild. For the Bornean species, there was both good and bad news. Prof. Carel van Schaik of Duke University, USA, explained, “The estimated number of orangutans in Borneo today is higher than we thought a decade ago, but that doesn’t mean that the actual number is higher. In fact the bad news is that, from the loss of habitat we conclude there are at least one third fewer than there were a decade ago.” Prof. Birute Mary Galdikas, President of Orangutan Foundation International (<http://www.orangutan.org>), added, “The problem is that habitat loss is accelerating. It would be easy to be pessimistic, but since President Megawati ordered the National Police Chief to clear illegal loggers from protected areas last February, the number of loggers in Tanjung Puting National Park has plummeted and the decrease in illegal activity in this Park is real. But sadly, in most areas of Indonesian Borneo, illegal logging is still rampant.”

The main threats to orangutans are habitat loss, forest degradation, fires, and poaching. Habitat loss is primarily due to clear cutting of the forest for agricultural plantations - mostly palm oil. Illegal logging is rapidly degrading remaining primary forest. Refugee orangutans are forced into small, isolated patches of forest, most of which are too small to ensure their long-term survival. Only a few biologically viable populations of orangutans remain. Currently almost none of these populations are sufficiently well managed and adequately protected.

Devastating forest fires, such as those in Indonesia and Malaysia during 1997 and 1998, still remain a serious potential threat and poaching for the illegal pet trade continues. At this moment, nearly 1,000 orphan orangutans live in rescue and rehabilitation centers. Most are infants and juveniles. It is estimated that at least five individuals die for every orphan that reaches these centers. Dr. Willie Smits, Chairman of Borneo Orangutan Survival (BOS) - Indonesia, declared passionately, “From the number of orangutans confiscated and smuggled in 2003, I estimate that 6000 were lost from the wild last year.” *Source: ZooNews Digest #282 January 21-23, 2004*

Florida Panther Update

A new report condemns the federal government “for relying on discredited science to justify destruction of the endangered Florida panther’s last remaining habitat” reports the National Wildlife Federation, Florida Panther Society and Florida Wildlife Federation. The analysis of the findings of an independent Scientific Review Team reveals that the Army Corps of Engineers permitted the destruction of thousands of acres of habitat “essential” to the panther’s survival, typically requiring only minimal mitigation. The report also calls on Bush administration to make “immediate adjustments” to protect the panther’s remaining habitat. FYI: <http://www.nwf.org/news/>.

In other news, Bonita Springs, FL has approved an agreement to annex 1,300 acres of designated Florida panther habitat in a move to facilitate a “gigantic development” that could include several golf courses and up to 4,700 housing units reports the *Naples Daily News*. The annexation would replace Lee County environmental restrictions that prohibit wetlands loss with more lenient city environmental codes and according to a USFWS “opinion” the development is “likely to have and adverse effect” on the endangered wood stork and may affect the endangered Florida panther. *Source: GREENlines Issue 2030 1-23-04*

In another related story, with the remaining panther population in southwest Florida growing “even as development wiped out thousands of acres” of their habitat, some experts maintain that establishing a new population in central Florida is the “only choice” if the species population is to “continue growing” reports the *St. Petersburg Times*. Other experts, however, say that establishing a new population there will present problems since at least three panthers trying to migrate north into central Florida have already been run over. Because panthers “demand big landscapes to live,” any panthers moved there “might quickly find themselves squeezed out again” due to central Florida’s rapid development. *Source: GREENlines Issue #2023 1-13-04*

Institutions wishing to advertise employment opportunities are asked to send pertinent data by the 10th of each month to: Opportunity Knocks/AKF, 3601 SW 29th St., Suite 133, Topeka, KS 66614-2054. Please include closing date for positions available, and when setting these dates keep in mind that because of bulk-mail, most readers do not receive their AKF until the middle of the month or later. There is no charge for this service and fax or e-mail listings of positions which become available close to deadline are accepted. Our Fax is (785) 273-1980; e-mail: akfeditor@zk.kscoxmail.com< Listing may be sent as MS Word attachment. We are no longer located at the Topeka Zoo, so please note new address to avoid delays in processing.

Zoo Keeper - Hollywild Animal Park, Inman, SC

Seeking to hire permanent keeper. Great team environment and opportunities for growth. To apply: Please mail or fax resumé including list of references to Lucia Meeks - Hollywild Animal Park - PO Box 683, Inman, SC 29349 - Fax 864-472-6336 You may also submit by e-mail to jobs@hollywild.com - Please visit our website at www.hollywild.org - Applications accepted through **30 April 2004**. **Requirements:** include a BS in animal science or related animal fields as well as minimum of two (2) years paid experience working with a mammal collection in a zoological setting. (Extensive animal experience may be substituted for a degree.) Applicant must be self-motivated, have a strong work ethic, a willingness to learn, good observation and communication skills and be able to work and interact well with others in a team environment. Applicant must be in good physical condition and have the ability to lift up to 60 pounds. Must have knowledge and experience operating basic farm equipment and tools, and the ability to work outdoors year-round in a moderate climate. Must possess a valid Driver's License before hire and maintain such for the duration of employment in this position. This is a non-smoking, drug-free environment. Weekend and holiday work is necessary. **Responsibilities:** Keeper will be working with a diverse collection of animals to include Asian elephant, rhino, numerous hoofed animals, felines, bears, canines and primates. Responsibilities for this hands-on positions include, but not limited to, providing daily cleaning and feeding, enrichment, observation, record keeping and reporting, exhibit maintenance, making minor exhibit modifications, assist in hand-rearing of young when necessary, plus assisting in capture, restraint, and veterinary procedures for animals in respective department.

Animal Keeper/Guides - Soco Gardens Zoo, Maggie Valley, NC

Several positions available for 2004 season, May through October. Salary \$240.00 per week, living quarters, utilities and uniforms also furnished. Please send cover letter and resumé to: Jim Miller, Soco Gardens Zoo, 89 Evans Cove. Rd., Maggie Valley, NC 28751, as soon as possible. **Requirements:** Paid zoo experience preferred but, volunteer experience acceptable; non-smokers; applicants must have strong, audible voices, neat appearance, good personalities, and must work well with co-workers as well as with the public. **Responsibilities:** duties include daily animal care of various primates, large and small cats, bear, parrots, wallaby, various reptiles, and others; exhibit cleaning and maintenance; various other maintenance duties; and educational lectures in a tour situation. Must lecture on both non venomous and venomous reptiles. Also, must have experience in handling non-venomous reptiles or a willingness to learn. Must be willing to work six days a week, including weekends and holidays.

Bird Keeper - Sacramento Zoological Society, Sacramento, CA

Send resumé to: Maggie Liguori, Animal Collections Manager, Sacramento Zoo, 3930 West Land Park Dr., Sacramento, CA 95822; (916) 264-8817; mliguori@cityofsacramento.org< We offer good benefits (in a city with no snow) and lots of fun! **Position open until filled.** **Responsibilities:** looking for attention to detail in the areas of diet preparation, behavioral enrichment, observation, and research. Our zookeepers are good communicators, project-oriented and able to prioritize across seasons. **Requirements:** requires AS degree with two (2) years experience in a zoo bird collection, related experience may be substituted.

Animal Handling and Presentation Internship - Point Defiance Zoo & Aquarium, Tacoma, WA

Now accepting applications for internships for the summer of 2004. This program is designed to provide participants with practical learning experience and knowledge in the field of animal husbandry, animal training and handling, and public presentations. This is an UNPAID internship and requires a commitment of 40 hours per week (including weekends) during the months of June, July and August. The internship is open to students currently enrolled or recently graduated from a college or university who have completed a minimum of one (1) year course work in the life sciences. **Application deadline is 15 April, 2004.** For more information or to request an application, contact Wild Wonders Outdoor theater staff at (253) 404-3670. **Responsibilities:** Interns will care for and handle a variety of birds, reptiles and mammals as well as participate in informal presentations in the Zoo's new Wild Wonders Outdoor Theater, a covered, 350-seat amphitheater that will feature off-leash and free-flight behaviors.

Reptile Internship

To apply send a cover letter, resumé, and at least two (2) (preferably 3) references to: Kristen Wiley, Internship Coordinator, Kentucky Reptile Zoo, 200 L & E Railroad, Slade, KY 40376. Or send via email

to: kyreptil@pop.mis.net< Starting dates are flexible, but a minimum commitment of three months covering SPRING (April-June), or SUMMER (June - August), or FALL (September - November) is required. Deadlines for applications each year are: SPRING - February 1st; SUMMER - March 1st; and FALL - June 1st.

The Kentucky Reptile Zoo, a nonprofit organization, is seeking a student intern for the 2004 Fall season. The zoo is an educational exhibit, reptile breeding and venom research facility located near Kentucky's Red River Gorge and Natural Bridge State Park. **Responsibilities:** The intern will assist in the captive maintenance of the zoo's reptile collection, collect admissions to the exhibit, give interpretive talks and interact with the public, assist with educational outreach programs, and perform other duties as assigned. In addition, the intern will be responsible for the completion of at least one research project related to the field of herpetology. The intern will **not be involved** in the handling of any venomous reptiles. **Requirements:** Desirable qualifications include a willingness to handle snakes and other reptiles on a daily basis, ability to communicate effectively with people, writing skills, orientation to details, and self-motivation. The intern will be required to work both Saturday and Sunday, with days off during the week. Students majoring in the biological or natural sciences are preferred. Interns are required to be either college students or recent graduates. Former interns have arranged for academic credit with their institutions. Interns have also been successful in finding zoo keeper positions, with a hire rate of over 95%! Benefits include experience with the most extensive and diverse collection of snakes in the United States, housing, and \$55/week to cover expenses. Personal transportation is recommended. A valid driver's license is required.

Big Cat Internships - Tiger Creek Wildlife Refuge (TCWR), Tyler, TXAs seen on Animal Planet in "Growing Up Tiger", TCWR is a division of Tiger Missing Link Foundation. Commencement date: On-going. Duration: three (3) months on a month-by-month basis. For additional information to see what past interns have to say about Tiger Creek, visit www.tigercreek.org< Are you interested in learning more about big cats or establishing a career path working in conservation as a zookeeper, a wildlife manager or a veterinarian? You can Earn Your STRIPES at Tiger Creek and obtain college credit through your college or university at the same time, there are up to four (4) positions available. At Tiger Creek you are more than a worker, you are considered a friend and we strive to build long-term working relations as we know you are the future animal caretakers! Interns are utilized for permanent animal care positions through a qualification system with opportunity for full-time paid animal keeper positions available based upon performance after training. **Requirements:** You provide a six (6)-day work week with a strong commitment for three (3) months, be capable of paying attention to details and follow safety rules, you must have your own transportation to and from the refuge and provide your own food while here. We provide room & board, uniforms, materials and curriculum, indoctrination and safety training. We even throw in use of the "tiger truck" for errands and entertainment adventures that you seek out. Within the new Intern House there is central heat and air, all furnished, a full kitchen, with two full bathrooms, two rooms shared by two students, a shared telephone line for incoming calls, internet access for email and surfing, a VCR, TV and even Satellite so that you and the other interns can enjoy Animal Planet during your off hours! All of this and a few rescued dogs or puppies in the backyard...because we want your stay to be as comfortable as possible while here at Tiger Creek. The Tyler-East Texas area has a lot to offer, there is horse back riding available at no cost to our interns, lakes within beautiful parks, movie theaters, numerous local night clubs and plenty of restaurants and much more.

Big Cat Internship – Wildlife on Easy Street, Tampa, FL

For more information contact Scott Lope at 813-323-5991 or email at catfoto1@aol.com

Two (2) positions available for six-month internship at TAOS accredited non-profit big cat sanctuary. www.wildlifeoneasystreet.com< **Responsibilities** (include but are not limited to): daily husbandry, exhibit cleaning, diet preparation, feeding, operant conditioning and behavioral enrichment for the following species: lions, tigers, leopards, cougars, lynxes, servals, caracals, bobcats, lemurs and other exotic animals. We provide invaluable hands-on experience, on-site housing and utilities, safety training and educational materials. Advanced training and long-term employment opportunities exist for the right candidates. **Requirements:** applicants must be willing to work six days a week, some holidays and follow strict safety guidelines. Hard work ethic and love of animals more important than degree.

Internships - The Florida Aquarium, Tampa, FL

Internships are available in Animal Health, Animal Programs and Husbandry departments. Internships available year-round for varying lengths of time and can be tailored to the individual student's needs. Internships are unpaid but provide valuable hands-on experience. Interested persons should send resumé to: Human Resources, 701 Channelside Dr., Tampa, FL 33602. For more information visit our website at www.flaquarium.org< **Responsibilities:** food preparation, feeding, cleaning enclosures, assist with medical procedures, animal observations, daily record keeping, enrichment activities, assist with training sessions and shows.

AAZK Membership Application

check here if renewal []

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Mail this application to: AAZK Administrative Offices, 3601 S.W. 29th, Suite 133 Topeka, KS 66614-2054. Make checks/money orders payable to AAZK, Inc. Must be in U. S. FUNDS ONLY. Membership includes a subscription to *Animal Keepers' Forum*. The membership card is good for free admission to many zoos and aquariums in the U.S. and Canada.



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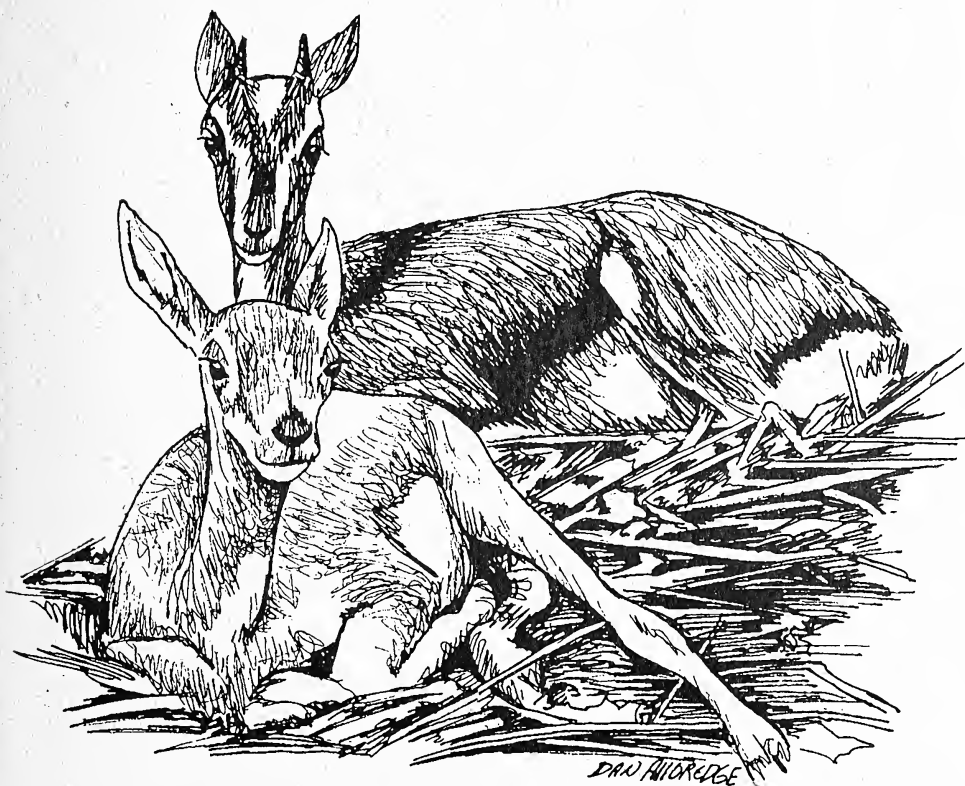
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Animal Keepers' Forum
30th Anniversary
1974 - 2004

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ANIMAL KEEPERS' FORUM



The Journal of the American
Association of Zoo Keepers, Inc.

APRIL 2004

Managing Editor: Susan D. Chan • **Associate Editor:** Kayla Grams, Lovell, WY • **Enrichment Options Coordinators:** Dawn Neptune, Utah's Hogle Zoo & Rachel Cantrell, Disney's Animal Kingdom • **Legislative Outlook Column Coordinator:** Georgann B. Johnston, Sacramento, CA. • **ABC's Column Coordinator:** Diana Guerrero, Big Bear Lake, CA • **Reactions Column Coordinator:** William K. Baker, Jr., Little Rock Zoo • **The Water Column Coordinators:** Dan Conklin and Kevin Shelton, The Florida Aquarium and Bruce Elkins, Indianapolis Zoo

Animal Keepers' Forum is published monthly by the American Association of Zoo Keepers, Inc., 3601 S.W. 29th Street, Suite 133, Topeka, KS 6661-2054. Ten dollars of each membership fee goes toward the annual publication costs of Animal Keepers' Forum. Postage paid at Topeka, KS.

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AAZK PUBLICATIONS - CONTINUING DATA COLLECTION

Biological Information (formerly Biological Values), 4th Edition - Jan Reed-Smith, Columbus Zoo

AAZK Enrichment Notebook 3rd Edition - Lee Houts, Folsom City Zoo

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About the Cover.....

This month's cover features a Cuvier's gazelle (*G. gazella cuvieri*) dam and fawn drawn by Dan Alldredge, a Keeper at Mesker Park Zoo & Botanical Garden in Evansville, IN. This species, considered rare as early as 1932, ranges in the mountains, hills and desert plateaus of Morocco (Atlas Mountains), Algeria and Tunisia. They are also known by many names including Atlas gazelle, Edmi gazelle and Mountain gazelle. They are browsers and grazers eating herbs and shrubs in the summer, and in the winter, green grasses. They can utilize water from plants as well as dew, but need to visit waterholes frequently. They weigh an average of 35kg (77 lbs.) and stand 70cm (28 inches) at the shoulder. The males are territorial and live in a group with 3-5 females and young. Gestation period is 170-175 days with birthing in the spring. Twins are common in this species. They were listed as endangered in the 1960's and in 2001 it was estimated that there were between 1500-2500 remaining worldwide. The Cuvier's gazelle is the only surviving gazelle endemic to the area north of the Sahara Desert. They have declined due to hunting for skins, meat and as a trophy, especially after motorized hunting with modern firearms became feasible. Loss of habitat due to continuous expansion of pastureland for livestock and deforestation for agriculture or charcoal appears to be the main threat now. Thanks, Dan!

Animal Keepers' Forum publishes original papers and news items of interest to the animal keeping profession. Non-members are welcome to submit articles for consideration. Articles should be typed or hand-printed and double-spaced. Authors are encouraged to submit their manuscripts on a disk as well as in hard copy form. Manuscripts submitted either on disk or electronically as attachments to an email should be submitted in Microsoft WORD. All illustrations, graphs, charts and tables should be clearly marked, in final form and should fit in a page size **no greater than 5.5" x 8.5"** (14cm x 22cm). Literature used should be cited in the text (Brown, 1986) and alphabetically in the final bibliography. Avoid footnotes. Include scientific name (as per ISIS) the first time an animal name is used. Thereafter use common name. Use metric system for weights and measurements (standard equivalents may be noted in parenthesis). Use the continental dating system (day-month-year). Times should be listed as per the 24-hour clock (0800, 1630 hrs. etc.). Glossy black and white **or** color prints (minimum size 3" x 5" [8cm x 14cm]) are accepted. Clearly marked captions should accompany photos. Please list photo credit on back of photo. Photographs may be submitted electronically as either JPEG or TIFF file attachments.

Articles sent to Animal Keepers' Forum will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for AKF. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the editor. The editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed, appropriately-sized envelope. Telephone, fax or email contributions of late-breaking news or last-minute insertions are accepted as space allows. Phone 1-800-242-4519 (US); 1-800-468-1966 (Canada); FAX (785) 273-1980; email is akfeditor@zk.kscoxmail.com<

**Deadline for each regular issue is the 10th of the preceding month.
Dedicated issues may have separate deadline dates and will be noted by the editor.**

Articles printed do not necessarily reflect the opinions of the AKF staff or the American Association of Zoo Keepers, Inc. Publication does not indicate endorsement by the Association.

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E-Mail Addresses: You may reach Barbara Manspeaker at AAZK Administrative Offices at: aazkoffice@zk.kscoxmail.com< You may reach Susan Chan and *Animal Keepers' Forum* at: akfeditor@zk.kscoxmail.com<

AAZK Website Address: www.aazk.org

BFR Website: <http://bfr.aazk.org>

Scoops & Scuttlebutt



Chapters Takes Advantage of Cleveland Challenge

A number of AAZK Chapters have taken advantage of the Cleveland Challenge by sending in an additional contribution with their Chapter Recharter. The Chapters submitting donations as of deadline and the area for which they designated their donation are: Rocky Mountain AAZK (Denver, CO) \$250 for General Operating Fund [GOF]; Southern Ontario Chapter (Toronto, Canada) \$1000 [GOF]; Central Illinois Chapter of AAZK (Springfield, IL) \$100.00 for Conservation, Preservation & Restoration [CPR]; El Paso del Norte Chapter (El Paso, TX) \$50 [GOF]; Virginia Chapter of AAZK (Norfolk, VA) \$200 split between GOF and CPR; Orange County Chapter of AAZK (Santa Ana, CA) \$50 [GOF]; Knoxville Zoo Chapter (Knoxville, TN) \$500 for AAZK Endowment Fund [EF]; AAZK of New Bedford Chapter (New Bedford, MA) \$25 [CPR]; Puget Sound Chapter (Seattle, WA) \$1000 [GOF]; San Antonio Chapter (San Antonio, TX) \$50 [GOF]; and San Diego AAZK Chapter (San Diego, CA) \$250 [CPR].

The Oklahoma City Chapter also sent in a \$150.00 donation in support of the Adopt-A-School program in Kenya.

The AAZK Board of Directors and the Administrative Office staff wish to thank all those AAZK Chapters who have so generously supported the mission of this Association. And a GREAT BIG THANK YOU to the Greater Cleveland Chapter for providing these matching funds!

2004 AAZK Awards Nominations Open

The AAZK Awards Committee is accepting nominations for the AAZK Jean M. Hromadka Excellence in Zoo Keeping Award, Meritorious Achievement Award, Lifetime Achievement Award, Certificate of Merit for Zoo Keeper Education, Certificate of Excellence in Exhibit Renovation, and the Environmental Enrichment Award which will be presented at the 2004 AAZK Conference in Dallas, TX. The deadline for nominations is **1 June 2004**. Information concerning qualifications, nomination procedure, selection procedure and an explanation of the awards may be obtained by contacting Janet McCoy, AAZK Awards Chair, Oregon Zoo, 4001 SW Canyon Rd., Portland, OR 97221. (*Editor's note: Information on these awards appeared in the January and February 2004 issues of AKF.*)

AAZK Announces Availability of Granting Programs

The American Association of Zoo Keepers announces the availability of two granting opportunities:

The Conservation, Preservation and Restoration (CPR) Grant – This \$1,000.00 grant is designed to encourage and support efforts in conservation conducted by keepers and aquarists in zoological parks and aquariums around the world. Members of AAZK, Inc. in good standing are eligible to apply and receive this grant. The member **MUST** have an active role in the conservation effort submitted for consideration. The division of this grant between two projects is at the discretion of the CPR committee. Funds are made available only after a progress report and receipts have been submitted.

The Zoo Keeper Grants in Research – Two \$1,000.00 grants are funded annually to encourage and support noninvasive research conducted by keepers in zoo and aquarium settings. The principal investigator **MUST** be a full-time keeper and a member of AAZK, Inc. in good standing.

Deadline for application submission for either grant option is **1 June 2004**. Successful grant recipients will be announced at the AAZK National Conference in Fall 2004. The grant cycle runs from 01 January 2005 to 31 December 2005. For further information or an application, see the AAZK Website at www.aazk.org, or contact Jan Reed-Smith, AAZK Grants Committees' Chair, jrsotter@iserv.net, 616-693-2680, Fax: 616-374-3263. Please specify which grant program you are interested in.

Toronto Zoo Keepers Seek Assistance in Study

We are working on a project to categorize the vocalizations of the endangered Vancouver Island Marmot (*Marmota vancouverensis*) in order to assist in captive breeding and reintroduction efforts as well as to learn more about the species in general. Has anyone had experience in recording vocalizations of any species for prolonged periods of time, whether in timelapse or real time, analog

or digital? We are interested in recording the vocalizations of our captive population of Vancouver Island Marmots, in conjunction with the timelapse video recording that occurs 24hrs/day 7 days/week during the breeding season. Combining the video and audio monitoring, we will evaluate the vocalizations and the behaviors that accompany them. Ideally we would like to record throughout the day when keepers are present (~8-9 hrs) and throughout the entire night (~15-16 hrs). Therefore, we are trying to locate a recording device/system that is capable of recording for a minimum of 16-hour stretches without having to change tapes/discs. If anyone knows of any such device we would be very interested in hearing about it. Please contact either Amy Mui (amy_mui@hotmail.com) or Colette Howell (chowell@torontozoo.ca).



News from The Clouded Leopard Project

The Clouded Leopard Project, a conservation organization founded and supported by the Point

Defiance AAZK Chapter, is pleased to announce the debut of its totally redesigned website, www.cloudedleopard.org. Thanks to the donated work of the Seattle-based web designers at elephants and ants, the site has a whole new look, enhanced content, videos, and interactive components. When you visit the site, be sure to check out the new book section linked to Amazon.com. The Clouded Leopard Project will receive a percentage from sales whenever you make a purchase from Amazon.com through the website.

The Clouded Leopard Project met with great success in 2003. Thanks to the generous support of a wide variety of donors, the Project has taken significant steps in advancing clouded leopard education, research, and conservation efforts both in North America and in Asia. In 2004, the Project's major focus will be on education efforts on behalf of Asian wild cats. This Asian Wild Cat Initiative is a multiyear project to develop educational resources for use by students and families in both North America and Southeast Asia. Thanks to the members of the Point Defiance AAZK Chapter, Point Defiance Zoo & Aquarium, AAZK's CPR grant, and friends of The Clouded Leopard Project for providing funding for this important work. Visit the website to learn how you can contribute to the effort, purchase clouded leopard products, or to learn more about the Project's programs.

A Choice of Trips Offered For Bowling for Rhinos Winners & Other BFR News Items

The International Rhino Foundation has agreed to fund two additional top money raisers in the Bowling for Rhino event to visit the sites we support in Indonesia. AAZK and IRF are currently finalizing a Memorandum of Agreement. Winners will have the choice of visiting Ujung Kulon, Way Kambas and Bukit Barisan Seletan National Parks in Indonesia and have the opportunity to see how Bowling for Rhino funds are put to use.

These trips will be offered in addition to the Lewa, Kenya trips. In order to be eligible to win the BBS trips, **one must have raised a minimum of \$1,000 and be an AAZK member in good standing**. Those who have won a visit to Lewa in the past are now eligible to win a BBS trip. For logistical reasons, only the winners (no guests) will be allowed to go on the BBS trip.

The winners will be based on the amount of money raised in 2004 for BFR and will travel in the spring of 2005. The top two money raisers will be offered their choice of either trip, while the fundraisers who place third and fourth will be offered the trips not chosen by the top two fundraisers. If a previous Lewa winner finishes in the top two, they are only eligible for travel to BBS.

So make your BFR goal at least \$1,000 and you will have a shot at one of four winning trips (much better odds than the lotto!) For questions, please contact Patty Pearthree at ppear3@aazk.org or 919-678-0449.

• Please send your 2004 Bowling for Rhinos event date and contact information ASAP to: Patty Pearthree, c/o BFR, 318 Montibello Dr., Cary, NC 27513. Chris Hartley from the Blue Rhino Gas Company will then contact local Blue Rhino companies in your area to get their support and participation in your event. Look for the BFR insert in the January 2004 issue of *AKF*.

• If your Chapter is willing to allow others to use past or present Bowling For Rhino t-shirt designs for their events, please email them to Patty Pearthree: ppear3@azk.org. We will then post them on the BFR website.

Leather Elves Design Contest Deadline Nears

Attention all AAZK members, it's time to put your thinking caps on. The AAZK Enrichment Committee and The Leather Elves are happy to be sponsoring the 2nd Annual Enrichment Device Design Contest. If you have an idea for a device that's just taking up space in your brain or if you have built something that has worked particularly well with your animals, share it with the world. Entries will be judged on safety, innovation and affordability. Keep in mind The Leather Elves do not weld and they do not use materials such as sheet metal. The winning device will be named after you, built by The Leather Elves and a portion of the proceeds for each sale will go to the AAZK. Please send in a written description and a diagram or drawing of your idea (don't worry - you do not need to be a professional artist!!) to: Robin Shewokis/The Leather Elves 43 Mutto Lane, Weymouth, MA 02189.

Entries must be received by **31 May, 2004**. The winning design will be announced at the AAZK National Conference in Dallas, TX and in a subsequent issue of the *AKF*.

AAZK Marketing Committee Seeks Members

AAZK is currently restructuring the Marketing and Development Committee and we are seeking qualified members to assist in the following areas:

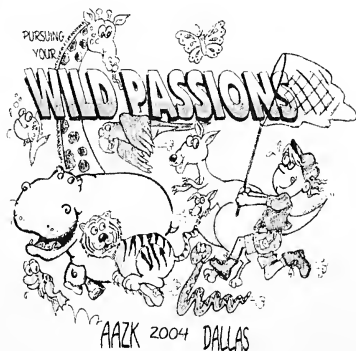
- 1) Marketing of Publications
- 2) Development and Marketing of Products
- 3) Coordination of Grants and Donations

If you have participated at the Chapter level with marketing or fundraising, or have experience in any of these areas and are ready to participate in AAZK at the national level, please contact Bob Hayes (BHayes@sandiegozoo.org) for more information.

Dallas 2004 - "Pursuing Your Wild Passions" - September 26th - 30th

What is Chapter Challenge 2004? In order to keep delegates' cost to a minimum, while ensuring the best possible conference, we are encouraging Chapters to donate. If your Chapter contributes \$250.00 or more to support the 2004 National AAZK Conference, they will be entered into a drawing. The winning AAZK Chapter will receive one full registration and one double occupancy room for five nights at the Adam's Mark Hotel (Sept 26-30, 2004). Letters detailing all the information were sent to all AAZK Chapters in January. Start planning now to meet the challenge!!!

For everyone looking for the latest information on this year's conference, please visit our web site www.dallaszoo.com and click on 2004 AAZK conference. This will take you directly to our conference home page. Contact information is also provided if you have any additional questions. We look forward to seeing everyone in September!!!



Coming Events

AZA Traveling Training - 24-30 April 2004. To include Keeper Training Course. At the Houston Zoo, Houston, TX. Contact Alexis Weider, Training Administrator at (301) 562-0777, ext. 256.

The Association of Exotic Mammal Veterinarians - 5 May 2004 in Naples, FL. Seminar "First Step: Basics and Beyond" on May 5th; the International Conference on Exotics held May 6-8th. For more information contact Dr. Melissa Kling at (478) 757-1600 or email mkn.dvm.uga@worldnet.att.net

ASZK Annual Conference 2004 - 7-9 May 2004, Australian Reptile Park, NSW, Australia. For additional information please email: slromer@bigpond.com

6th International Zoo Design Symposium - 9-13 May 2004 at Paignton Zoo Environmental Park, UK. For further info please visit: <http://www.paigntonzoo.org.uk> or email zoodesign@paigntonzoo.org.uk

AZA Eastern Conference - 12-15 May 2004. Hosted by the Louisville Zoo. For information contact Sandra Allen (502) 238-5608.

3rd Annual Callitrichid Behavior Husbandry and Management Workshop - 14-15 May 2004. Free with Preregistration. Conference site hosts: Lincoln Park Zoo and John G. Shedd Aquarium. For information contact Michelle Farmerie at (412) 365-2385. Email abrownie@wcs.org for a preregistration form.

AZA Otter SSP® "Otter Keeper Workshop" - 2-4 June 2004. To be held in conjunction with International Otter Colloquium (see next listing). The workshop registration fee is \$50.00 with enrollment limited to 20 participants. Lodging and meals are available at the university for roughly \$65.00 per day (includes three meals). For additional information contact jrsotter@iserv.net or go to the Knoxville Zoo website (www.knoxvillezoo.org) for a registration form.

IX International Otter colloquium - 4-10, 2004 at Frostburg State University, Frostburg, MD. Theme is "Otters: Ambassadors for Aquatic Conservation". For more information go to <http://otter.frostburg.edu>

The Care and Management of Chimpanzee Workshop 18-20 June, 2004. Sponsored by the Chimpanzee SSP at the Saint Louis Zoo, St. Louis, MO. Three-day course covering all aspects of progressive chimpanzee husbandry. Topics include managing complex social groups, operant conditioning training, social introductions, contraception strategies and enrichment programs. \$65.00 registration includes program materials/lunches. Space is limited. For info contact Steve Ross, Chimpanzee SSP Coordinator at ross@lpzoo.org or by calling (312) 742-7263

Joint Conference of the American Assoc. of Zoo Vets, the Wildlife Disease Assoc. and American Assoc. of Wildlife Vets - 27 August-3 Sept. 2004 in San Diego, CA. For additional info, contact Wilbur Armand, VMD, Executive Director/AZV at (610) 892-4812 or email AAZV@aol.com

2004 Gorilla Workshop - 25-28 June, 2004 in Calgary, Alberta, Canada. Hosted by the Calgary Zoo. Look for more details and registration information as they become available at their website - <http://2004gorillaworkshop.tripod.com>

Association of Avian Veterinarians 25th Annual Expo and Conference - 19-20 August 2004 in New Orleans, LA. Will include paper sessions, master classes, practical labs and workshops dealing with topics related to avian medicine and stewardship. Theme is "Birds and All That Jazz". For more info or to view the entire program visit www.conferenceoffice.com/aav or email aav@conferenceoffice.com, or phone (303) 756-8380

International Zoo Educators (IZE) Conference 2004 4-9 September 2004 at Ocean Park, Hong Kong. For more information visit - <http://www.izca.net>

2004 AZAD Conference - 8-12 September 2004. Hosted by the Philadelphia Zoo. For more info contact Bert DeVries or Mary Murphy at AZAD2004@AZADocents.org

25th Annual Elephant Managers Association Conference - 14-17 October, 2004 in Tulsa, OK. Hosted by Tulsa Zoo and Living Museum. Pre- and post-trips scheduled to Dickerson Park Zoo and Riddle's Elephant and Wildlife Sanctuary (18 Oct.). For more info email: karendunn@ci.tulsa.ok.us or visit www.elephant-managers.com and/or www.tulsazoo.org

Carnivores 2004: Expanding Partnerships in Carnivore Conservation - 14-17 November, 2004. Presented by Defenders of Wildlife in Santa Fe, NM. Features three full days of sessions on terrestrial and marine carnivore issues, plus a poster session, field trip, silent auction, banquet and ambassador wolf sessions. Please visit website at www.carnivoreconference.org or leave a message at (202) 789-2844 ext. 315 for details. Abstracts for papers being accepted until 1 June 2004.

6th International Aquarium Congress - 5-10 December 2004 in Monterey, CA. Hosted by the Monterey Bay Aquarium. Additional information in English, French and Japanese is available online at <http://www.iac2004.org>

The 7th International Conference on Environmental Enrichment - to be held in August 2005 in New York City, NY, USA. The conference is hosted by the Wildlife Conservation Society (WCS). Watch this page for details as they become available.

PLEASE NOTE: The International Scrow Summit: 2nd Symposium on Capricornis and Its Related Species, originally scheduled by the Japan Scrow Center for 2004, has been indefinitely postponed. Information will appear here when it becomes available.

Post Your Coming Event Here - email to:
akfeditor@zk.kscxmail.com

From the Executive Director

Every year a few of the Chapters attach additional donations to their Chapter Re-charter Applications. The Chapters can select where they would like to see these funds applied to working within the Association. These funds help us greatly, reducing the pressure on membership-generated funds, to support the Association programs. I would like to take the opportunity to personally thank those chapters that contributed so far this year.

General Operating Expenses

El Paso del Norte Chapter	\$50.00
Northern Lights Chapter AAZK	\$355.00
Orange County Chapter of AAZK	\$50.00
Point Defiance AAZK	\$710.90
Puget Sound Chapter	\$1000.00
Rocky Mountain AAZK	\$250.00
San Antonio Chapter	\$50.00
San Francisco Chapter AAZK	\$250.00
Southern Ontario Chapter	\$1000.00
Utah Chapter AAZK	\$250.00
Virginia Chapter of AAZK	\$100.00
Greater Houston Chapter AAZK	\$250.00

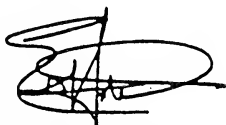
Conservation, Preservation and Restoration Grant Fund

AAZK of Cheyenne Mountain Zoo	\$125.00
AAZK of New Bedford Chapter	\$25.00
Central Illinois Chapter of AAZK	\$100.00
Point Defiance AAZK	\$710.91
Virginia Chapter of AAZK	\$100.00
San Diego AAZK	\$250.00

AAZK Endowment Fund

AAZK of Cheyenne Mountain Zoo	\$125.00
Knoxville Zoo Chapter	\$500.00

Thanks for the continuing support.



Ed Hansen, Executive Director, AAZK, Inc.
Tucson, AZ



AAZK Announces Two New Grant Programs!

As part of our goal to promote AAZK member continuing education and experience, the AAZK Board of Directors and Grants Committee is pleased to announce the creation of two new grant programs. These are the AAZK/Geraldine Meyer Professional Travel Grant and the AAZK – AZA Keeper Course Grant.

The AAZK/Geraldine Meyer Professional Travel Grants are designed to assist AAZK members with costs associated with attending professional meetings or workshops, or participating in field research. The applicant must be an AAZK member in good standing and demonstrate 1) the value of participating in the workshop, meeting, or research and 2) how it will contribute to their professional goals and growth.

A total of \$2,000.00 is available annually. Grants are awarded twice a year, in May and November. Applications, from new and experienced keepers, are evaluated on their merit based on the member's submission of all requested materials. Awards may range from \$1,000.00 to \$250.00 or less depending on need. Applicants are encouraged to solicit additional funds from their institution or other sources. Applicants with other committed funds, or in-kind support (time off) will receive slight priority but all applications are encouraged.

Applications for mid-year consideration are due by 1 February of the calendar year; applications for end of the year consideration are due by 1 July of the calendar year. Money will be available upon notice to the recipient. Winners are required to submit an article to the *Forum* on the workshop or research in which they participated.

Fifty percent of the money available for this grant comes from AAZK and 50% from the Meyer-Reed Ecological Fund in memory of a woman who loved wildlife and believed in the work keepers and aquarists do.

The AAZK – AZA Keeper Course Grant awards \$1,000.00 to the winning applicant to attend the new Keeper Course offered by AZA through their professional school program. Applications are due by 1 July of the year prior to the one in which the applicant wishes to attend the Keeper Training course.

Until the required forms are placed on the AAZK website, they may be obtained by contacting the Grants Committee Chair at: jrsotter@iserv.net, jan.smith@columbuszoo.org or 616-902-2401.

MOVING?

Please let us know when you change your address! It now costs AAZK about \$1.00 every time an *AKF* is returned because of an incorrect address. We have more important things to spend the Association's money on! Please call 1-800-242-4519 (U.S.) or 1-800-468-1966 (Canada). If you should get the answering machine, please speak slowly and clearly when giving your address change. Or you may email your address changes to: aazkoffice@zk.kscoxmail.com

THANKS !

AAZK Announces New Members

New Professional Members

Erica Farrell, **Zoo New England (MA)**; Bonnie Soule, **Roger Williams Park Zoo (RI)**; Stephanie Radowitz, **Lutz Children's Museum (CT)**; Amanda Gray, **no zoo listed (CT)**; Pam Monseur, **Miami Metrozoo (FL)**; Thaisa M. Anderson, **Nashville Zoo at Grassmere (TN)**; Lynda Staker, **Kentucky Down Under (KY)**; Jeff Dawson, **The Columbus Zoo (OH)**; Brook Rodriguez, **Akron Zoo (OH)**; D. Ryan Fritz, **Ft. Wayne Children's Zoo (IN)**; Thomas Holt, **John Ball Zoological Gardens (MI)**; Ben Hubred, **Minnesota Zoo (MN)**; Angela Maxey and Joseph T. Svoke, **Kansas City Zoo (MO)**; Kathy Ober, **Cheyenne Mountain Zoo (CO)**; Antoinette Cancellaro and Kara Gonzalez, **Wildlife World Zoo (AZ)**; Nicole Hernandez, Karla Butler, Tammy Legg, and Saldy C. Portacio, **The Living Desert Zoo (CA)**; Cindy Wilson, **America's Teaching Zoo (CA)**; Tracy Nappi, **San Francisco Zoo (CA)**; Christine Allen, **Oakland Zoo (CA)**; Corey D. Burback, **Wildlife Safari (OR)**; and Michael Stern, **Woodland Park Zoo (WA)**.

Renewing Contributing Members

June L. Masek, Docent
Cleveland Metroparks Zoo, Cleveland, OH

Bonnie Jacobs, Lead Keeper
Lincoln Park Zoo, Chicago, IL

Renewing Institutional Members

Great Plains Zoo &
Delbridge Museum of Natural History
Sioux Falls, SD

Tom Ness, Director of Animal Services

Wildlife World Zoo
Litchfield, AZ
Mickey Ollson, Director

Calgary Zoo Library
Calgary Zoo
Calgary, Alberta, Canada
Alex Graham, President/CEO

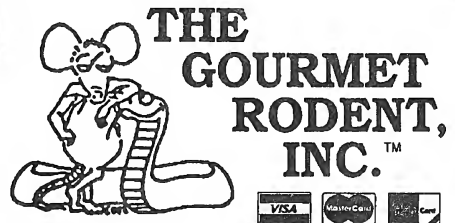
Wolf Update

Last of Pioneering Wolves Killed

No. 41, the last surviving wolf from the historic 1995-96 Yellowstone reintroduction was gunned down by government agents after killing calves reports the *Billings Gazette*. The killing comes less than two weeks after the death of "her more famous sister" who had been a key member of the Druid Peak pack, "the most observed group of wolves in the park. No 41 was the alpha female of the Sunlight Basin pack but had been displaced and turned to killing calves after suffering a lame front foot and severe mange. All of the original 31 reintroduced wolves have now died, although "their offspring and the wolf program are thriving with about 170 wolves in the park." *Source: GREENlines Issue #2048 2-19-04*

Montana Wolf Numbers Down

A count of wolves in northwest Montana "shows declining numbers and that cast doubt on the government's contention that the population is robust enough to remove from federal protection as an endangered species" reports the *Missoula Independent*. The USFWS 2003 census found wolf numbers in the region had dropped to 92 from 108 the year before and "only four pairs of wolves produced at least two pups that survived the year," in 2002 there were 11 breeding pairs. Although federal and state officials are "playing down" the decline, "independent wildlife experts say the numbers show that the recovery of wolves in the northern Rockies, while impressive, is still fragile." *Source: GREENlines Issue #2054 2-27-04*



RATS AND MICE

Bill & Marcia Brant

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Just Released.....

Biological Information on Selected Mammals 4th Edition

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A product of the American Association of Zoo Keepers, Inc.

The 1,396 page *Biological Information on Selected Mammal Species* CD covers a wide range from general, breeding, and young-rearing behavior to diet and physical descriptions of 590 species. The volume is in a PDF format allowing searches by Species (Common or Latin name); or Key words using the *Find* function; or by Species (Common or Latin name), Family; or Order using the *Bookmarks*. Table of Contents are given for Orders, Families, Species by Common Name, Species by Scientific Name, and Species by Order and Family. The Appendices cover a variety of information from behavioral patterns common to families (Bovid displays) to taxonomy (Primates). References are listed by Order and Family.

Biological Information for Selected Mammals CD Order Form

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Callitrichid Workshop Planned

It's time again for the 3rd Annual Callitrichid Behavioral Husbandry and Management Workshop. For those of you who are unfamiliar with the workshop it is presented by the Cotton-top Tamarin SSP. The goal of the workshop is to develop resources to create additional opportunities for both institutions and individuals that will increase learning and communication on the topics of callitrichid behavioral husbandry and management, including resources and information about as many species of Callitrichids as possible. Opportunities for networking and information exchange are provided and there is a commitment to **FREE** workshops to keep attendance costs to a minimum. Previous years' workshops were held at the Wildlife Conservation Society and the Pittsburgh Zoo and PPG Aquarium and conference site hosts are planned to vary regionally across the country to provide access and opportunity to as many institutions and individuals as possible.

The components of the workshop include: Invited Workshop Instructors; Invited Guest Speakers; Formal Presentations; Interactive Discussion Groups; Training Demonstrations; Cotton-top Tamarin SSP Behavioral Husbandry; and Management Recommendations

Based on the feedback from 2003 attendees, the workshop this year has been planned for two days, Friday 14 May and Saturday 15 May. The conference site hosts are the Lincoln Park Zoo and the John G. Shedd Aquarium.

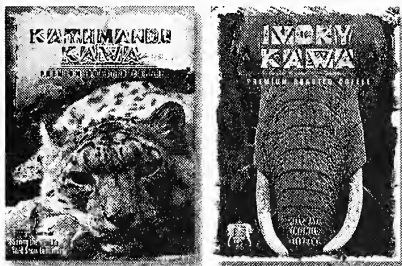
Some topics planned to be discussed this year include callitrichid biology, callitrichid husbandry, callitrichid veterinary care, callitrichids and vitamin D, updates on GLT and Callimico research in the wild, advances in callimico hand-rearing, mixed-species panel discussions, callitrichid training, training troubleshooting and program record keeping, and coordinating behavioral management programs and veterinary care. Callitrichid training demonstrations at both the Lincoln Park Zoo and the John G. Shedd Aquarium and time for open discussion topics and question and answer sessions are sure to make this year's workshop both educational and enjoyable.

For a pre-registration form please email abrownie@wcs.org. Please feel free to direct any questions to Michelle Farmerie @ 412-365-2385. We look forward to seeing you in Chicago!

*Submitted by Michelle Farmerie, Workshop Chair
and Anthony Brownie, Workshop Proceedings Editor*

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Dallas this September -

The Dallas Zoo, proclaimed by *Child* magazine to be one of the top 10 zoos in the country, is pursuing their staffs' wild passions in many directions. Our 95-acre site, just south of downtown Dallas, is bisected by Cedar Creek, refuge to native beavers, bobcats, perch, water and rat snakes and too many birds to name.

Nostalgia may overtake you when you stroll under the mature trees of ZooNorth, the original part of the zoo.

Here you will find the Snout Route, Lemur Lookout, Exxon Endangered Tiger Exhibit, Primate Place, an extensive bird

and groundbreaking reptile collection. The LaCerte Family Children's Zoo has domesticated animals and the fascinating Nature Exchange. The Wilds of Africa shows off the African bird and mammal collections, especially the apes, in naturalistic biome settings as seen on your personally guided monorail tour.

On Zoo Day, our behind-the-scenes tours will show we are a zoo in transition, providing the best animal care we can by renovating older areas and designing and building new ones. Animal research is a key component at Dallas. Our current *in-situ* projects include Ocelot, Anegada Island Iguana, and Interior Least Tern biology. Our *ex-situ* research highlights are: everything you wanted to know about okapis, artificial reproductive techniques, dik dik and flamingo behavior, black rhino and ocelot ontogeny, reptile reproduction and husbandry, and primate exhibit use.

September typically is perfect weather for outdoor living in Dallas (average temperature is 75°F). We can boast some of the biggest and best. The conference will be held in the Adam's Mark, the largest hotel in Dallas. Big Tex will welcome you to the Texas State Fair, the largest state fair in the country. On the art deco 1920's World's Fair grounds you can see Steve Martin's bird show, 4-H animal and dog shows, home-made goods, art and auto shows, concerts, and a huge midway while munching on the latest deep-fried candy bar. The world-renowned Meyerson Symphony Center, designed by I. M. Pei, is a "tunable" building in the downtown arts district. The Dallas Cowboys, the Dallas Stars, The Kennedy Museum, the West End entertainment district, and more restaurants per capita than any other city in the U.S. are all in Dallas. The Icebreaker will be at the Dallas World Aquarium. Free access to the DART rail will leisurely get you to these and innumerable other destinations **including the airport**.

Take advantage of the discounted hotel and car rates before and after the conference. Within a five-hour drive radius you can reach Ft. Worth, Caldwell, Cameron Park, Fossil Rim, Ellen Trout, Houston, Oklahoma City, Abilene and San Antonio zoos. Our pre-conference trip features a lunch hosted by Cameron Park and an overnight stay at Fossil Rim. Post-conference details coming soon!

So check our web-site at www.dallaszoo.com for the latest conference information and we'll see y'all this fall!



American Association of Zoo Keepers
31st Annual National Conference
Dallas • September 26-30, 2004

First Call for Papers

The theme for this year's conference is "Pursuing Your Wild Passions." We are looking for papers, posters, workshops or round tables that include inspirational or motivational aspects of the zoo keeping profession. Presentations involving all taxons are desired. Topics of interest include husbandry techniques, training, enrichment, education, exhibit design, conservation, research, and professional development.

Include the following information with each abstract:

- Name and title of presenter(s)
- Institution
- Address, including e-mail
- Title of paper, poster, workshop or roundtable
- Short bio of presenter (for introduction)
- Audio/Visual needs

Deadline for Abstracts:

1 July 2004

Deadline for Papers:

26 August 2004

Abstracts should be limited to one or two paragraphs. Abstracts must include in detail the significance of the topic to be presented along with the results, conclusions or benefits of the work described. The relevance of the presentation to the conference theme should also be included. Poorly written or incomplete abstracts will be returned!

Send abstracts by e-mail to jboylan@mail.ci.dallas.tx.us Or, submit two(2) copies of the abstract to: Jeanette T. Boylan, Dallas Zoo, 650 South R. L. Thornton Fwy., Dallas, TX 75203

CONFERENCE NOTES AND UPDATES

Website - For more information about the conference check out our website at: www.dallaszoo.org Questions? Call (214) 670-7436 or email annreams@yahoo.com.

Sponsors - The conference is a very costly production and we would appreciate any AAZK Chapter or group that would be willing to sponsor an event such as a break or hospitality night. Or, if you would like to make a donation to help cover expenses, it would be greatly appreciated. For more information contact Bonnie Hendrickson at Chimps: (214) 243-2336.

Exhibitor's Tables - There is space in the Exhibitor's Hall for Chapters or groups interested in selling or displaying their products or causes. Cost per table: 1) \$50.00 for non-profit groups such as an AAZK Chapters or TAGs; 2) \$100.00 for profit groups such as wildlife artists, suppliers, etc. Please contact Ann Reams at annreams@yahoo.com.

Travel Information - The official conference airline is American Airlines. Discounts vary from 5% to 10% depending on how early you make your reservations. The Dallas AAZK group code number is S0594AL. Avis will also discount auto rentals if you mention you are flying with American. Each coded reservation will help to bring dynamic speakers to your conference.

Texas State Fair - Catch Steve Martin's Bird Show at the fair! Half-price tickets for the Fair are available if you pre-pay through us. Add this cost to your registration fee and the ticket will be in your welcome packet.

Pre-Conference Trip - The destinations for 25-26 September are Cameron Park in Waco and Fossil Rim in Glen Rose.

Post-Conference Trip - 1-3 October - TBA

Video Night - Start taping your animal videos now! There will be showings nightly in the Hospitality Suite.

Auction Items - If you are bringing an item, it would be great if you could send it early to: Dallas AAZK, c/o Dallas Zoo, 650 S. R. L. Thorton Freeway, Dallas, TX 75203.

ABC's

ABC's: Animal Behavior Concerns and Solutions

A Question & Answer Forum for Animal Professionals

©2004 by Diana Guerrero, Independent Behavior Consultant
Ark Animals of California, Big Bear Lake, CA



Zebra Evaluation (*Equus grevyi*) *Part One of Two*

Question

We have been experiencing some trouble with our male Grevy's zebra (*Equus grevyi*) and could use some guidance. What do you suggest?

Background

The animal in question is a mature male zebra in his teens. He exhibits aggressive behavior towards keepers and other zoo staff. Although this behavior escalates when humans are in close proximity, it is also exhibited when mechanical equipment and people are visible, even at a distance.

The aggressive behavior has been escalating over the past four years, but was first observed about the same time training efforts began—also about four years ago. The animal slams into the perimeter fence, bites the fence, kicks barriers, and has broken doors, gates, and other exhibit items.

The aggressive behavior decreases when he is housed with the mares, that are held in an adjacent enclosure. This housing situation is not expected to change due to SSP recommendations. In the past, this animal has directed aggressive behavior toward visitors from the main exhibit. As a result, the main area is not available for rotation as this animal would be a hazard to any unsuspecting visitor reaching into it. In addition, the yard has been assessed as being inadequate to keep this animal safely confined. The possibility of escape is a real risk, and until the exhibit is redone, this animal will not be placed on public view.

Discussion

This zebra is currently housed in a small penned area containing a barn with three stalls. The outdoor area is adjacent to the main exhibit housing the mares. He has limited visual contact with the mares, more visibility of other areas along one fence line, and limited visibility to the service road on another side. The stalls are constructed on the remaining side.

Although mother-reared, this animal was habituated to humans as a youngster. He received lots of human contact and interactions. Essentially, he was not treated as a wild animal, but more like a pet, and learned to show and direct conspecific behavior towards humans. Worse yet, he learned to express his frustration aggressively when he was not given attention or indulged.

Besides elevated levels of testosterone, this animal is highly intelligent. He is a good student of human behavior and learned how to manipulate people. Due to his intellect, he tests the parameters constantly. He has also been accidentally reinforced for aggressive behavior. Behaviors currently under stimulus control are reported to include: station, turn, line up, target, come, stay, and he will position on a weight board. Unfortunately, he will also decide to terminate a session—with no apparent consequences.

This animal shows a preference for certain staff members and enjoys tactile contact, smells, and blowing into his nose. He will sometimes accept yams and carrots during training.

Presenting Problem

When any human approaches within his critical distance, (the distance where he first reacts—about 50 feet from the pen) he exhibits agitation. His tail curls up above his back, he kicks, vocalizes, snorts, and slams against the fence. (The slamming against the fence resembles neck wrestling.) He also tries to bite. This behavior escalates prior to evening lock up and when keepers are in close proximity, but are not giving him attention. The behavior can also occur when equipment passes the exhibit, or when people are visible from a distance. He will calm down when given attention. Other behaviors observed include flehmen, and although isolated, this animal will also exhibit herding and biting threats while moving (head lowered).

In the past this animal has not shown interest in novel enrichment devices. He is not motivated by food reinforcement, but prefers tactile contact and attention from keeper staff. During my observation period, he was reinforced for acceptable behavior during an agitated state rather than for calmness. This explains why his aggressive behavior has escalated. In the questionnaire, both the time period of escalated aggression and the implementation of the training program coincide.

When tested, he exhibited a clear response to verbal reinforcement and differentiating criteria. He also clearly decided to test the parameters to see what level of behavior would produce a positive response, a time-out, and what differences in duration would occur, if any.

Assessment

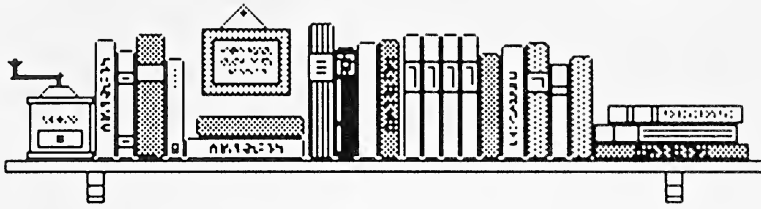
There are a variety of challenges to overcome with this animal. He is high energy and incredibly responsive—which will prove to be a challenge to novice or intermediate trainers.

Since he does not exhibit a high degree of adverse behavior when housed with the mares, his social urges are directed toward keeper staff when he is separated from the mares. He exhibits frustration and kicks at the barrier adjacent to the main exhibit when he is not exhibiting that same behavior at staff.

Diligence, consistency (not predictability), and variable schedules are mandatory to get this zebra's inappropriate behavior redirected.

Next Month: Part 2 - Zebra evaluation concludes with specific suggestions.

*About the columnist: Since 1978 Diana L. Guerrero has worked professionally with both wild and domestic animals. Guerrero has been affiliated with and certified by a variety of animal programs in the USA and Europe. Based in California, she writes, consults, and leads safaris. Information on her animal career programs, training courses, and her newest book, *What Animals Can Teach Us about Spirituality* (SkyLight Paths, 2003) are available through her website. Questions for ABC's should be submitted to Diana directly through the ABC's questionnaire on her website, via email zooit@arkanimals.com, or through regular mail: c/o ARKANIMALS.COM, PO Box 1989-215, Big Bear Lake, CA 92315 USA.*



Book Reviews

Snakes and Their Ways

By C.H. Curran and Carl Kauffeld

Original Edition 1937; Reprint Edition 2003

Krieger Publishing Company, P.O. Box 9542, Melbourne, FL 32902-9542

ISBN 1-57524-229-X 340 pgs. Hardcover \$39.50

Review by Kathy Thomas

*Assistant Naturalist and Animal Care Supervisor
Lewis Wint Nature Center, Clarkston, MI*

Whether or not you like snakes, whether or not you know a lot about snakes, you may enjoy reading this book. While natural history of the animals is paramount in their writing, authors Curran and Kauffeld relate some of the natural history of snakes through stories of personal experience, as well as those of other herpetologists. If you like a good story, you will probably enjoy this book!

Even though this book was originally written over 65 years ago, the general snake biology is still accurate. The book begins with an overview of serpents in general, including snake characteristics. It then spends a bit of time describing venoms and various venomous snakes. In following chapters, snakes are grouped according to what they eat and where they live, rather than taxonomically. The main part of the book ends with descriptions of "sea serpents" and an overview of various snake myths. The book is well-written, and because of the technical level and sometimes graphic stories, I would not recommend it for a juvenile. It is also a book to be used as a quick reference for snake facts. While there is a lot of snake biology, it is not set up as an encyclopedic guide. It is more in story form.

Even though I thought I knew a lot about snakes, there was some new knowledge for me in this book. I have told children the fallacy about how the milk snake acquired its name. I have said that snakes do not like milk, however, the book corrected me:

"Some authors, in denying the truth of the milk sucking habits of snakes, have stated emphatically that snakes do not drink milk...Some snakes do drink milk if it is provided for them...it is a common practice in India...for milk to be placed in saucers for the cobras."

Especially interesting for me was the chapter dealing with snake myths. Working as an interpretive naturalist, we relate snake stories to the public. The book explains the science and/or logic behind the myths.

The only part of the book that I found a bit long was the section about "sea serpents". The most interesting read, albeit the most graphic, was the recounting of various snakebites and resulting outcomes. There are very few pictures in the book, just a few drawings and etchings, and a small section of black and white photos. After the main text, there is a checklist of the snakes of the U.S. and Canada. The authors get a bit wordy in some areas, but overall it was an enjoyable book. Natural history is woven in with relationships to mankind and many historical ties. I would recommend this book to any adult interested in animals, but especially to a herpetologist, naturalist or zoo keeper.

**Snakes of the United States and Canada:
Natural History and Care in Captivity**

By John V. Rossi & Roxanne Rossi

August 2003 ISBN # 1-57524-031-9

Krieger Publishing Company, P.O. Box 954, Melbourne, FL 32902-9542

576 pgs. Hardback \$145.00

Reviewed by Tracey L. Anderson

Instructor - Pikes Peak Community College

Zookeeping Technology Program, Colorado Springs, CO

I usually tend to skip the introduction of books and jump right into the text. However, the introduction in this book proved to be a very interesting and informative way to begin the investigation of the remainder of the content of the book. The introduction states that “this is one of the first books in over 40 years to discuss the natural history of almost all North American snakes (at least 51 genera) in a single volume.” Lacking only 3 or 4 species including the genus *Tantilla*.

Regardless of your field of study or career, it is always important to research the natural history of the animals you are working with. This book has incorporated a thorough natural history of each of the species in the text. This information includes the animal’s geographic range, preferred habitat, known prey, known as well as potential predators, thermal preferences, mating seasons, incubation and gestational periods, clutch sizes and even some behavioral content. In addition to knowing the natural history of an animal it is also important to distinguish between the wild versus captive behaviors observed. Another valuable asset of the content of this book is the author’s attention to the obvious differences between the two sometimes very different behaviors of the wild animal and the captive bred animal. The information in the book “starts with observations of wild snakes and then discusses captivity observations.”

The material in this book goes way beyond what the title indicates. The first 75 pages could be a separate book on it’s own. Within these first pages you’ll find an overview of snake natural history starting at the very beginning with their evolution in the Cretaceous Period. This section covered a lot of material including the basic unique anatomical characteristics of snakes to their distribution. The ‘experts’ could skip this section, but I find that it is the completeness of the information found in this book that makes it more valuable as it allows it to be a great teaching/learning tool for the non-experts as well. There is even a short section on conservation which should interest everyone. The Keeping Snakes – General Care section starts with housing and includes information on choosing a snake, capturing, transporting/shipping, cleaning and disinfection, temperature, humidity and water, ventilation, lighting, substrate, feeding, psychological factors, hibernation, sexing, breeding and egg incubation, juvenile care, handling, and even records, warning signs and first aid. Even though these sections were short and basic, they contained complete and accurate information which once again would make this a great source for those needing the whole package.

The actual book title content begins with the nonvenomous species giving both the scientific and common names in ordered alphabetically from the scientific name. There are tables, charts, drawings, maps and good quality color photographs throughout the book. This would be a valuable book for anyone working with or interested in North American snakes. It has already proven to be a great reference book for me.

In the Shadow of Mount Kenya: Otters, African Wild Dog and More!

By Jan Reed-Smith
Lake Odessa, MI

As AAZK members we are all passionate about some aspect of nature. We spend our professional, and often, personal hours engaged in appreciating, learning about, or teaching others about nature. Frequently, due to financial or time constraints, many of us never make it out to appreciate the exotic animals we work with in their native environment. I would like to share with you some of my field experience and encourage you to consider doing something similar. Go wild my friends, it's an experience you will never forget!



I recently returned from a dream trip to Kenya where I participated in some ongoing otter research. The otter study is based at the Mpala Research Center located on the Mpala Ranch in the Laikipia district west of Mount Kenya. One of the fascinating features of this experience, (in addition to the otter research which as some of you know is a passion of mine) was the opportunity to learn about some of the other projects being conducted from this same center. These projects range from the impact of wildlife on the vegetation of the black cotton soil ecosystems, to acacia pollina-

tion by native wild bees, hartebeest behavior, zebra ecology, a broad-based carnivore behavior and human impact project (supported in part by WCS and the Columbus Zoo & Aquarium), to the recolonization of the Laikipia Plateau by the African wild dog. While all of these projects would be of interest I have selected two to report on briefly; anyone interested in learning more about these projects, or the other work being conducted at Mpala should join us for the October Lewa/Mpala trip developed specifically for AAZK members.

The Laikipia district, covering some 9,666km², is comprised primarily of semi-arid range lands divided into a series of privately, publicly, and communally owned properties. The Mpala Wildlife Foundation covers 2,032 hectares with an additional 17,842 hectares protected by the Mpala Ranch. In 1994 the Mpala Research Center was established as a non-profit scientific and training facility to address environmental issues affecting components of the landscape and to seek ways of resolving their conflicts. The center is administered by the Mpala Research Trust in collaboration with the Kenya Wildlife Service, the National Museums of Kenya, Princeton University, and the Smithsonian Institution. Dr. Nick Georgiadis (forest vs. savanna elephants for you pachyderm types) is resident Director of the center.

African clawless otter (*Aonyx capensis*)

There are at least two species of otter found in sub-Saharan Africa, the African (Cape) clawless otter and Spot-necked otter (*Lutra maculicollis*). Very little is known about these species outside of southern Africa where most of the work has been conducted in Zimbabwe or South Africa. As a result, both the IUCN/SSC Otter Specialist Group (OSG) and AZA Otter SSP have been promoting the need for further *in-situ* research on these species. (There is possibly a third species, the Congo clawless otter, that is being investigated by Claus Reuther chair of the OSG).

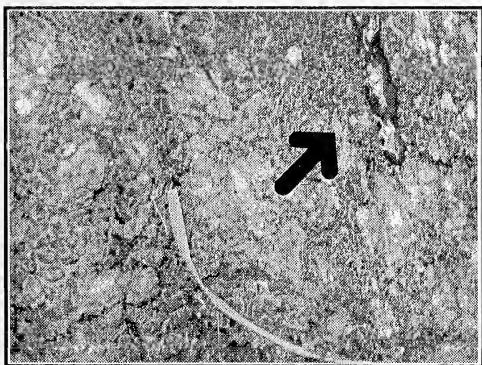
Mordecai (Mordy) Ogada, a PhD student at Jomo Kenyatta University in Nairobi, is the principal investigator on the project looking at the status of the African clawless otter and the impact of

human activities on the distribution and status of this widespread, yet little known species. My first insight into exactly how little known this species is was at the Safari Park Hotel where I spent my night of arrival in Kenya. While waiting for Mordy and Darcy (his wife) to pick me up, I explained to several people why I was there, none of them had ever heard of otters! It took two weeks to find someone to tell us the Kikuyu word for otter; there is no Swahili name specifically for otter.

To a large extent this lack of awareness is due to the specie's secretive habits, confining their activity primarily to crepuscular and nocturnal hours, and their preference for densely vegetated rivers and swamps. As you would expect however, those people living in water-associated ecosystems are more familiar with the otter and report that, in addition to being considered pests around fish ponds, the clawless otter is blamed for crop depredation particularly on young maize and cabbage plants. This is an area we hope to further investigate.

Mordy has been focusing particularly on the impact of the introduced Louisiana crayfish (*Procambarus clarkii*) on the otters' historic, primary food source, a small fresh water crab (*Potamonautes neumanni*). One year into the study his results are showing that the crayfish provides a cyclic boom and bust food base (versus the continuous supply of crabs) that may be influencing the home range size, and/or resource use of the clawless otter in river systems where this exotic species has displaced the native crab.

The rivers running through Mpala are the Ewaso Ng'iro (originating in the Aberdares and Mpala's main river), Ewaso Narok (originating in the Ewaso Narok swamp in Northwestern Laikipia), and Nanyuki (originates on Mount Kenya). The latter two flow into the Ewaso Ng'iro which flows north to Samburu and ends in the Lorian swamp. Thus far the study indicates that at least two groups are using the Ewaso Ng'iro, one the Ewaso Narok, and no otter sign have been found on the Mpala portion of the Nanyuki River. The invasion of the crayfish into these riverine ecosystems appears to be impacting the clawless otter population by causing them to seasonally abandon habitually used activity centers or causing a behavior shift in marking patterns. As a result we found very little sign of otters during January and the first part of February 2004 which coincided with a post low-water phase of the rivers. The water depth is significant because Mordy believes the crayfish become vulnerable to other predators, such as heron and baboon, during times of low water volume, forcing the otters to prey on fish which are more difficult to catch.



Otter secretion on a tree trunk marking territorial boundary.

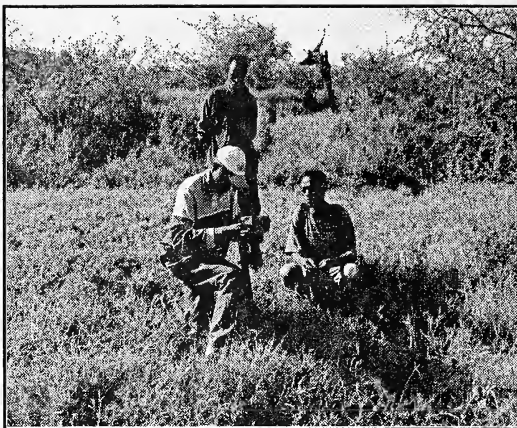
As a test, and as part of our goal to survey more of Kenya's water systems for presence of otter, we also searched a portion of the Burgaret River, too cold for the crayfish to colonize. This river also originates on Mount Kenya; the area we surveyed was located in the foothills of Mount Kenya where the water is still quite cold. Here we found several otter activity sites, fresh scat, and indications of the otter marking their territory by pasting jelly secretions on tree trunks and urine-spraying on near-by vegetation. While seeing clawless otter in the wild seldom occurs, Darcy was lucky enough to watch one animal forage and eat two crabs while floating leisurely on his back down river! The rest of us had to make due with celebrating our finds of fresh scat and Eau de Otter. The results of the

Burgaret survey indicate that where crab are still found the otters are behaving in a more sedentary, territorial fashion. However, until surveys of other water systems are conducted it will not be possible to determine the exact nature of the crayfish impact on otter behavior and density.

African Wild Dog (*Lycaton pictus*)

Imagine my surprise when the first morning out we encountered a pack of nine wild dog! While it was easily apparent the dominant female was expecting soon, the resident researchers Stephanie and Peter told us two others also were pregnant (generally these other litters do not survive past one year of age). This study began in 2002 when there were very few wild dog in the area, today Rosie

Woodroffe, principal investigator, believes there are approximately 120± in the Laikipia to Samburu area. Reasons for this increase are unclear; the wild dog population overall continues to decline. But, on the Laikipia plateau where dik dik are an abundant food source, and lions are scarce (particularly in the communal lands where the dogs have made their strongest come back) this species appears to have regained a foothold. The habituated Mpala packs are yielding some interesting information as we will find out in October when we visit with Stephanie and Peter at Mpala.



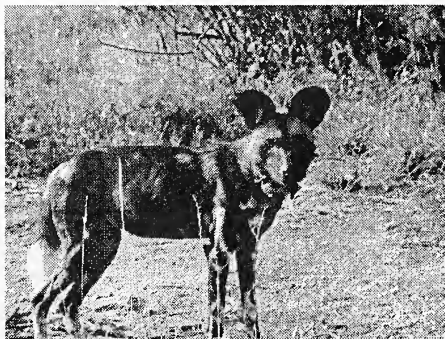
My primary goal in writing this article is to encourage everyone to find time in your schedule to travel to the field and to invite AAZK members to join me in October for a conservation/research trip to Kenya. The group will 1) visit Lewa (7 nights) where we will relax in the luxury of the Lewa Tented Camp between bouts of game viewing, otter surveying (the entire group will be invited to participate in two days of surveys, this is not required), and visiting with some of the Conservancy's community projects; 2) visit the Mpala Research Center (three nights) where we will camp on the Ewaso Ng'iro River and spend time with researchers working at the center; and 3) spend one night at the Il Ngwesi community run lodge. If you are interested contact Jan at jrsotter@iserv.net.

CONSERVATION & RESEARCH in the SHADOW of MOUNT KENYA

A TRIP DESIGNED FOR AAZK MEMBERS

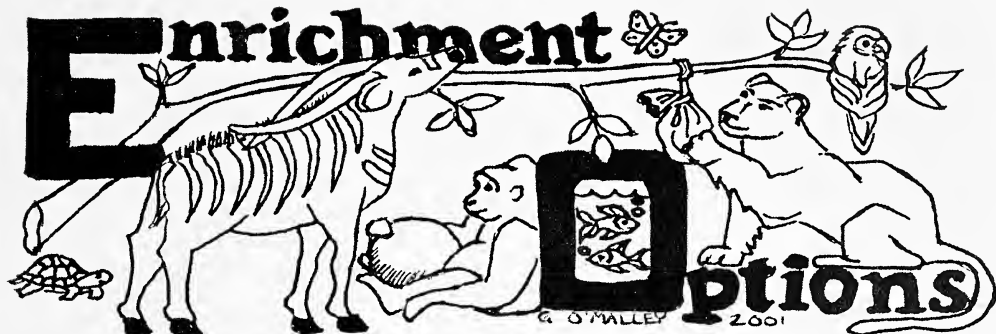
Game drives and research at Lewa, the communal lodge Il Ngwesi, and a stay at the Mpala Research Center in the Laikipia District of Kenya are the highlights of this trip. In addition

to fantastic game have a chance to visit community projects Prior to our Lewa spend several days at Center where we will and walks, participate study by checking centers for fresh signs researchers working on



viewing, we will with some of the supported by Lewa. experience we will the Mpala Research go on game drives in an ongoing otter known activity of use, and visit with everything from the

re-colonizing wild dogs to the pollinization of acacia by wild bees. While at Lewa, those interested, also will be able to participate in new otter survey work. Trip dates are 06 October to 19 October 2004 (15 days). Cost is \$3,985.00 double occupancy which includes air from Detroit and ground transportation in 4X4 vehicles; add-on airfare can be arranged. For information contact Jan Reed-Smith at jrsotter@iserv.net or, 616-693-2680.



*EO Editors - Dawn Neptune, Utah's Hogle Zoo
and Rachel Cantrell, Disney's Animal Kingdom*

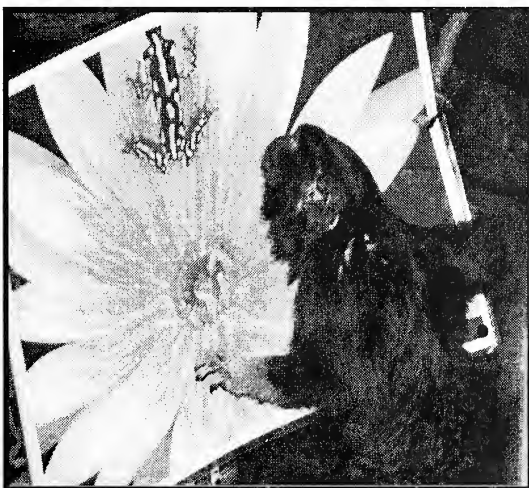
Enrichment Options: Variations from the Norm

*Submitted by Gina Savastano, Senior Wild Animal Keeper
Wildlife Conservation Society/Bronx Zoo, Bronx, NY*

As primate caretakers, we are obligated to provide enrichment for these intelligent and sentient beings. As a result, the challenges of enrichment are far-reaching. Enrichment can be mentally stimulating, physically challenging, primarily food driven or involve novel stimuli. In a zoo setting, food enrichment can complicate a diet regime and novel items are not always financially feasible. The caretaker must then become creative to offer non-food enrichment at little to no cost.

At the Wildlife Conservation Society/Bronx Zoo, the Monkey House keeper staff have been exploring different methods of enrichment with our callitrichid and cebid collection. Our goal is to provide items that mentally stimulate them, appeal to their sense of sight, touch and smell, as well as elicit natural behaviors. However, the greater challenge was in finding ways to accomplish our goals by avoiding food-based and costly methods. The results of our efforts thus far have been favorable.

To appeal to the primate's sense of vision, we laminated colorful pictures and hung them in their enclosures. We chose a variety of plants, birds, and mammals of all colors and sizes. We observed the monkeys sitting in front of the pictures with their faces right up to the print, or even grabbing the edges and hanging on while looking on the front and backside. Pictures are left hanging all day, and the monkeys return back and examine them from all different angles.



Tamarin views laminated photo of poison dart frog on flower. (Photo by Julie Larsen Maher)



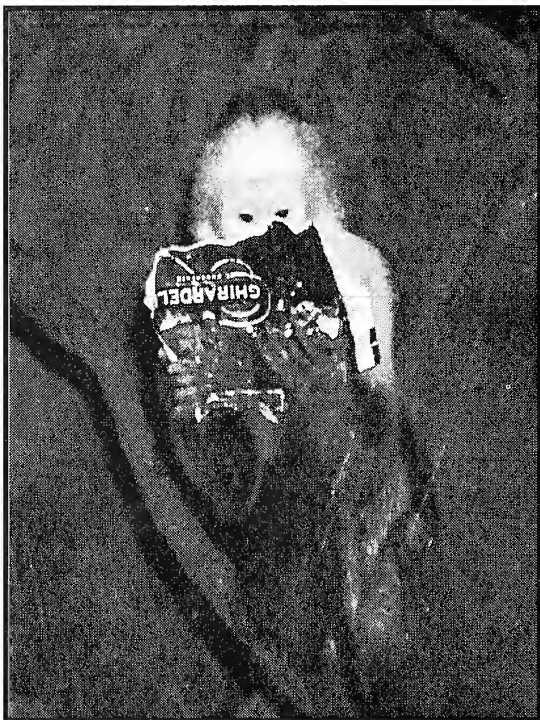
Flavored snowballs offer a unique enrichment treat to the Bronx Zoo's primates (Photo by Julie Larsen Maher)

Encouraging natural behaviors of primates in captivity is sometimes difficult due to exhibit space constraints but incorporating features of their habitat can yield positive results. We constructed swings from fallen trees in the park. By drilling a hole in the middle and feeding rope through, these provided moving perches, allowing the monkeys to leap, swing and balance.

Appealing to the sense of touch, squirrel monkeys enjoy chasing small plastic wiffle balls as they bounce throughout the exhibit. The lightweight ball bounces at all different heights allowing them to leap and jump from the vines to the floor and back. The rapid activity is perfect for these high-energy animals. The entire group participates in the chase, and it is a favorite among the public.

New York was a blanket of snow in early November and we decided to offer snowballs to the New World primate collection. The monkeys appeared to be stimulated by the cold sensation. Once they touched it, they would repeatedly look at their hands. Some would shake them while other rubbed their bodies with their cold, wet hands. As the snow began to melt, they would drink the falling drops. As a special treat, we have mixed gum arabic or apple juice to flavor the snowball.

Food boxes brought in from home from cake mixes, cereals, and crackers, each equipped with its own unique odor, can stimulate the monkey's sense of smell. They have been observed carrying these boxes and even stuffing their own food in them. Plastic peanut butter jars, and drink bottles are also favorites with the capuchin monkeys who dunk them in a tub of water, retreat to a high perch with the filled container and drink from it.



The scent left on a food product box offers an interesting sensory experience for this primate. (Photo by Megan Maher)

At the Monkey House, the quest for safe, stimulating, and cost-effective enrichment is endless. In the meantime, the keepers are having as much fun constructing items as the animals are using them.



The rope and wood swing, made from fallen trees from the park, provides primates with the opportunity to display natural behaviors such as leaping, swinging and balancing. (Photo by Julie Larsen Maher)

(Ideas appearing in this column have not necessarily been tested by the editors for safety considerations. Always think ahead and use good judgement when trying new ideas. You are invited to submit materials for the Enrichment Options Column. This might include recipes, toys, puzzle feeders, olfactory enrichment ideas, etc. Drawings and photos of enrichment are encouraged. Send to: AKF/Enrichment, 3601 S.W. 29th St., Suite 133, Topeka, KS 66614-2054. Eds.)

Training Terminology—Part 2

Training Methods

*By Beth Stark, Chair
Animal Behavior Management Committee*

Last month we introduced some of the concepts of operant conditioning: operant conditioning, reinforcer, positive reinforcer, negative reinforcer and punishment. This month, we continue the discussion of operant conditioning with a few basic training methods. There are many ways to train any particular behavior; however, the method chosen should be one that is appropriate, safe for the trainer and animal, comfortable for the trainer, and logical to achieve. If one method is not working, it is often helpful to try another. It is important to remember, however, the constant communication between trainer and animal. Through the bridging, reinforcement, as well as the chosen methods of training, the trainer is communicating to the animal what is desired and what is not.

***Approximation**—One small step in a series of progressive steps that leads to the behavioral goal. Approximations can be linked together in a sequence toward a final goal behavior in a process called *shaping by successive approximations*.*

***Shaping by successive approximations**—An operant conditioning method of taking an action or tendency and shifting it one approximation, or step, at a time, toward the final behavioral goal; building of a behavior by dividing it into small increments or steps and then teaching one step at a time until the desired behavior is achieved. Steps become a series of intermediate goals.*

Most animal trainers rely on the use of shaping by successive approximations. This is the process that we often use when learning or teaching people new skills. We start with something we know. In piano playing, for example, students first learn where to place their fingers on the keys. Next, they learn the notes, followed by scales and exercises. Finally they learn entire songs. Using the same concept with animals, a zookeeper can train innumerable behaviors with the animals in their charge. Almost any mammal can be trained to accept hand injections by using approximations. The trainer might first target the animal into the appropriate position. The next approximation might be to target the animal's shoulder or hip for a "lean in." Once this approximation is complete the trainer could begin desensitizing the animal to the touch of the needle—again using approximations. This might be accomplished by starting with a dowel rod and then progressing to the end of a paper clip, then to a blunt needle, and finally to the sharp needle. Of course this is a simplified training plan and other steps might be needed. However, the concept here is that each step in the training process is an approximation. The training plan is really an example of shaping by successive approximations.

***Capture (scan)** – The process of placing a behavior that is initiated by the subject under stimulus control by reinforcing the behavior as it spontaneously occurs.*

Capturing, or scanning a behavior is a fairly common training tactic, especially in shows or other demonstrations. In this type of training, the trainer reinforces the animal for offering a behavior that the trainer finds desirable. By reinforcing the behavior, the trainer is communicating to the animal that s/he likes what s/he sees. Looking back to the principles of operant conditioning, an animal that experiences a positive consequence to an action is likely to repeat that behavior in the future. With scanning, the animal learns (and ultimately remembers), through the trainer's bridging and reinforcing of the behavior each time the

animal offers it, the positive consequence of offering the behavior and will begin to offer it more frequently. Capturing a behavior can be a useful training tool. Animals might offer behaviors that are appropriate for demonstrations. They might also anticipate a training step and offer something desirable that can be reinforced and included in the training program. However, it is important to remember that if an animal refuses or forgets a behavior that has been captured, there is no way to get the behavior back—in other words, there are no training steps (approximations) to revert to—so the behavior would have to be retrained “from scratch.”

***Observational learning** – A type of learning in which one animal learns by observing the behavior of another animal.*

As in capturing behavior, observational learning does not rely on specific training steps. Instead, animals learn by mimicking another. For example, an ape might learn to present its feet for inspection by observing others doing so on cue and seeing them receive a reward. This training method is especially useful when training animals to perform behaviors in a specific pattern. For example, one dolphin could be trained to wave its flipper while swimming around the perimeter of the pool. This behavior might initially be trained by training the flipper wave and then targeting the animal around the pool. Other dolphins could then be trained (using shaping by successive approximations) to wave their flippers and then paired with the first dolphin to learn the swim pattern. Keep in mind when using this training method that if the behavior should break down, it is likely that the animal will either need to be paired with another animal that does the behavior well or the behavior will need to be trained “from scratch.”

The above training methods are valuable to know and are only the “tip of the iceberg” in terms of how to train a behavior. In addition to training steps or a training plan, the trainer must be armed with the appropriate communication tools. Stay tuned for next month’s article on some of these terms—the bridge and types of reinforcers.

CHESTER ZOO RICHARD HUGHES SCHOLARSHIP AWARD 2004

Chester Zoo is a leading Zoological Garden in the U.K. actively involved in the conservation of threatened species, habitat support, scientific study and the provision of education and recreation to the general public. In February 2001 Richard Hughes, a senior keeper at Chester Zoo, tragically lost his life working with the elephants that he loved. In memory of Richard, Chester Zoo have dedicated an annual scholarship award to support individuals wishing to undertake activities or projects concerned with elephant management, welfare and conservation.

The scholarship is open to applications for any type of activity or project that deals with issues of elephant management, welfare or conservation either overseas or in the UK. Proposals are encouraged from individuals from any relevant field who have an interest in elephants, from animal keepers and researchers to students. Details we require for application include an outline of the project, aims and a statement of its relevance. Clearly, feasibility will be an important criterion when judging the submitted proposals.

The North of England Zoological Society expects those awarded the scholarship to uphold the high standards that it expects of its own employees and to be fully acknowledged in any presentations/publications. It is a condition of the scholarship that the Zoo receives a full report on the completed project and copies of any resultant publications. The recipient may also be requested to provide a brief article for the Zoo magazine or to give an oral presentation on the completed project. Scholarships will be awarded up to the value of £1000 for which the Society may require receipted expenses (Any special equipment purchased will remain the property of the Society).

Application forms are available from Scott Wilson, Conservation Assistant, The North of England Zoological Society, Chester Zoo, Caughall Road, Upton by Chester, Cheshire, CH2 1LH or via email from s.wilson@chesterzoo.co.uk Applications should be received **no later than Friday 30 April 2004**. Applicants will expect to hear whether or not they will be required for an interview **by 31 May 2004**.



REACTIONS

A Question and Answer Forum for the Zoo Professional on Crisis Management

*By William K. Baker, Jr., Curator
Little Rock Zoo, Little Rock, AR*

Question

How critical is communication to a crisis or daily operations?

Comments

In my experience the single greatest problem in a crisis is communication. It isn't the animals, failing equipment, or severe weather, it's getting staff members who aren't directly involved in the crisis to stay off the radio. Another important facet is for staff members to communicate prior to a crisis. By that I mean, staff knowing where equipment and supplies are if they have been moved, being aware what their responsibilities are and where they should be in a crisis, and keeping their teammates informed of changes in positioning during a crisis. However, the vast majority of these problems can be resolved during the training process.

Question

Is there currently any place that you can go to receive training for crisis management and/or zoological safety?

Comments

Currently there is no place that I am aware of that offers training in crisis management or zoological safety. However, if I had to single out one institution that has done a stellar job at advancing this training at their facility, it would be the Dallas Zoo. I would recommend contacting them for advice on developing or advancing your own training program.

Question

What are your views on free-contact animal training?

Comments

I still believe that free contact training can be extremely effective with a wide variety of species when a zoological professional has the appropriate training and experience. However, while free contact has the potential to be extremely effective, it also has the potential to be extremely dangerous. Personally, I believe that the key to success is realizing and optimizing a trainer-animal relationship that stresses positive reinforcement and mutual respect.

Question

You have written in the past about adding lights to shotguns for use after dark or in a darkened building. Is there a low-cost option rather than using the high-end law enforcement stuff?

Comments

Yes, there is! Tacstar offers a light mount that sits in their Sidesaddle ammunition carrier. Essentially you purchase the Sidesaddle carrier and mount it to the shotgun. The carrier will store four or six rounds of ammunition depending on the gun model. Then you place the light mount in one of the holders. The holder will receive and hold a 1" or 3/4" flashlight. I normally use a Maglite® mini-mag, (2 AA). So far I have been pleased with this as a low cost alternative. Contact your local gunsmith for information and ordering.

Question

How critical is budgeting to crisis management training?

Comments

Over the years I have worked with Emergency Response Teams that work on a shoestring budget and at other institutions I have actually had line items that support this type of training. I cannot stress enough that budgeting and institutional support for an ERT is critical to the training and equipment that the staff will receive and use.

In my experience, the items that will require funding up-front will be capture equipment, dart rifles, and firearms. But, without the training supplies such as practice darts and ammunition, the up-front purchase is kind of superfluous. What will really require long-term support is the dedicated funding for firearms practice on a monthly basis. Ideally, this type of expenditures should be included in the annual budgeting process.

Question

What type of vehicles do you prefer to use for emergency situations?

Comments

This may sound kind of vague, but it really depends on your situation. Some facilities use enclosed vehicles such as pick-ups for dangerous animal escapes, while other facilities prefer to search and respond on foot. I've used most of the electric and gas powered vehicles on the market for servicing exhibits and I have a marked preference for John Deere 6 x 4 Gators®. They are really versatile and go most anywhere. Also, they can be had in an emergency responder kit that provides stretcher transport space for injured personnel. However, if I were at a rural facility with large amounts of acreage, I would use a pick-up truck. In a crisis in an urban zoo setting, I would probably prefer to use a combination of Gators and on-foot to address the situation.

Next Month: How important is morale to the overall safety of a zoo?

If you would like to submit a question for this column or have comments on previously published materials, please send them to AAZK, Inc., 3601 S.W. 29th St., Suite 133, Topeka, KS 66614 Attn: Reactions/AKF

(About the Author: Since 1985 Bill has been active in the fields of science, zoology, and wildlife management. His education and experience include a B.S. in wildlife management and post-graduate studies in zoology, Lab and Museum Assistant, Shoot Team Leader, ERT Member, Large Mammal Keeper, Senior Keeper, and Zoo Curator at various zoological facilities. His area of research is crisis management in zoological institutions, which draws upon practical experience and training as a Rescue Diver, Hunter Safety Instructor, NRA Firearms Instructor, and Red Cross CPR/First Aid Instructor.

An Update on Zoonotic Disease Concerns for Pregnant Zoo Keepers and Expectant Fathers

By

Ed Hansen

Risk Management Coordinator

City of Tucson, Tucson, AZ

(This article was originally published in the *Animal Keepers' Forum* in February 1997 [Vol. 24, No. 2, pgs. 75-80]. After many requests, I have updated the previously published information and provided some new areas to ponder)

When a zoo keeper becomes pregnant, sometimes the joy is followed closely by trepidation about her work environment. Aspects of working around exotic animals that yesterday "were just a part of the job", can become worrisome when you are now responsible for protecting that bundle of joy. Concerns will not only be raised in your own mind, but questions may also come from your partner and/or your family. Articles on pregnancy are published everywhere as is research on zoonotic diseases. Rarely are the two areas mentioned in the same breath.

It is extremely important that the parent(s) inform their primary care physician and/or obstetrician that one of the parent(s) is in the exotic animal care profession. Do some basic research, or take this article, to your physician so they are aware of the basic diseases faced by individuals in this profession. Every OB/GYN knows the dangers of Toxoplasmosis, but few physicians have even heard of Psittacosis. It is very important to remember that even the healthiest of women are considered immune-suppressed when pregnant, especially during the first trimester. They are susceptible to many debilitating disease organisms that they would normally fight off with little or no effect.

Why bring the expectant father, the non-pregnant partner, into the equation? Because some of the zoonotic diseases to be discussed can be transferred with simple fluid to fluid (oral, sexual) contact with your "at risk" pregnant partner. The unsuspecting father can transport all sorts of bacteria from the zoo on their uniforms or even on the tread of their shoes. With diligent and effective hygienic practices and adequate personal protective equipment (PPE) you can all but eliminate the threat of disease transference to your family and imminent family.

As a part of employment, animal keepers remove animal waste from the environment. In doing so, they expose themselves to the biological nightmares that are shed from the animals. Contact with animal waste is part of the profession. Just remember when you rake enclosures, you send material into the air and breathe them into mouth and nose. The body refuses most of this assault in the form of a sneeze, cough or spit, but some particles pass into the lungs. When you hose down, you aerosolize particles (think of the mist you see when you enter the shower) and because they are moist, you inhale them deep into your lungs, where they remain.

This article references the need to wear a respirator. Simple surgical type masks are effective for intermittent exposures, but not against *constant or prolonged* exposure to dry airborne or aerosolized (wet) particulates, or gases. The most effective protection is to wear a half-face respirator with organic type cartridge that meets the ANSI standard for the materials that occur in your work environment. You must have a complete respirator physical, performed by a doctor and the mask must be fit tested by a qualified party. Your physician must be informed of your pregnancy status, as wearing a respirator is physically challenging. Borrowing a co-worker's respirator is ineffective and may be harmful to you and your unborn child.

The zoonotic disease concerns that you may encounter are listed alphabetically, ranked according to risk. Consider each of them to be a serious threat and take adequate precautions. At the end of this section, additional areas of concern are discussed, such as the potential for exposure to radiographs and anesthetic compounds.

Anthrax

Anthrax (*Bacillus anthracis*) is commonly found in the soils of the Western United States. It is also commonly carried by wild and domestic herbivores. Humans can be exposed when they come in contact with tissue from infected animals or carcasses or by eating under-cooked meat from infected animals. Exposure occurs in three forms: inhalation, cutaneous (skin), and gastrointestinal. Mothers are at risk through the entire pregnancy. The danger for the fetus lies in aggressive antibiotic treatment needed to control the disease. Additionally the fetus could suffer from the electrolyte imbalances caused by vomiting and diarrhea associated with the gastrointestinal form of the disease. Untreated inhalation and gastrointestinal Anthrax infections have a 90-95% fatality rate.

Fetal Risk: Cardiac arrhythmia, electrolyte imbalance
Precautions: Disposable gloves, respirator
Diagnosis: 7-day incubation, skin lesions, sputum cultures
Treatment: Doxycycline (not indicated in 1st trimester)

Campylobacteriosis

Campylobacter in its most common form *Campylobacter jejuni* is a gram-negative enteric organism which cause severe diarrhea, cramping, nausea and fever. The organism is commonly found in the stool of infected mammals and birds. Typical infection occurs from fecal/oral contact. Mothers are at risk during their entire pregnancy. The fetus is at risk for electrolyte imbalances caused by fluid loss from the associated vomiting and diarrhea. This organism has been identified as a specific cause of spontaneous abortion in some species of mammals.

Fetal Risk: Abortion (undocumented in humans), cardiac arrhythmia
Precautions: Disposable gloves, Aggressive hand washing
Diagnosis: Stool culture
Treatment: Antibiotics and supportive fluid therapy

Cryptococcosis

Cryptococcosis is an encapsulated yeast-like fungus most commonly isolated in the feces of birds, usually fowl and pigeons. Typical infection originates from fecal/oral contact or the ingestion of dried or disturbed aerosols. Mothers are at risk during the entire pregnancy. This fungus can invade the brain, causing headaches, dizziness, vertigo and sometimes coma. This illness is similar in form (but not symptom) to Coccidioidomycosis.

Fetal Risk: Respiratory distress
Precautions: Disposable gloves, surgical mask. Prolonged exposure: Respirator
Diagnosis: Fungal culture
Treatment: Anti-fungals (Nizoral®, Sporanox®)

Cryptosporidiosis

Cryptosporidiosis is an enteric coccidian protozoan commonly found in the intestinal tract of fish, birds, reptiles and mammals. Mothers in their first trimester are considered immune-suppressed and are at considerable risk to this protozoa. Typical infection occurs from fecal/oral contact, but transmission from person to person is also likely. Rodent feces should also be considered *Cryptosporidium* positive. Symptoms range from diarrhea to severe and debilitating dysentery. The fetus is at risk due to electrolyte imbalances caused by fluid loss from diarrhea or lack of fluid intake during mother's illness.

Fetal Risk: Cardiac arrhythmia
Precautions: Disposable gloves
Diagnosis: Stool culture
Treatment: Metronidazole

Giardiasis

Giardia is a flagellate protozoan more common than **Cryptosporidium**, with the exception that human/human transmission is greatly reduced. Symptoms, risk, precautions, diagnosis, and treatment is identical to that for **Cryptosporidium**.

Psittacosis (also known as Ornithosis)

This organism is the avian form of Chlamydia. Psittacosis/ornithosis is the clinical term applied to birds. The organism is commonly found in the feces of infected birds. Typical infection occurs when the mother ingests fecal aerosols. Symptoms are flu-like, often accompanied by respiratory distress. Mothers are at risk during their entire pregnancy. The treatment for Psittacosis (like Anthrax) is Tetracycline or Doxycycline, which are known to inhibit calcium absorption, which may harm the fetus in the first and second trimesters.

Fetal Risk:	Affected by treatment of the mother
Precautions:	Disposable gloves, respirator
Diagnosis:	Serum titers (unreliable due to false +/- results or previous exposures)
Treatment:	Tetracycline

Salmonellosis

Salmonella is a bacterium found in the intestinal tract of mammals, birds and reptiles. Typical infection occurs from fecal/oral contact, but person to person transmission has been documented. Salmonella is also commonly found in all raw animal-derived food products and is commonly found in the soil contaminated by infected animals. Both animals and humans can carry the virus in latent form. Mothers are at risk during their entire pregnancy and according to the New York Department of Public Health, Salmonella can cross the placenta barrier to the fetus, resulting in fetal death or it may also be contracted as the baby passes through the birth canal. Because Salmonella can cause severe debilitating diarrhea, the fetus' risk is cardiac arrhythmia caused by electrolyte imbalances due to fluid loss and non-replacement in the mother. *Salmonella typhimurium*, the most common form of Salmonella, has been documented to cause sporadic abortions in horses and cattle. Infants should be considered at extreme risk for Salmonella infections.

Fetal Risk:	Intrauterine infection, death, cardiac arrhythmia
Precautions:	Disposable gloves
Diagnosis:	Stool culture
Treatment:	Antibiotics, including Tetracycline, fluid therapy

Shigellosis

Shigella is a gram-negative bacterial rod belonging to the family *enterobacteriaceae*. It contains a number of species that cause digestive disturbances ranging from mild diarrhea to severe dysentery. This bacterium is commonly found in the feces of mammals. Typical infection occurs from fecal/oral contact and mothers are at risk through their entire pregnancy. The fetus is at risk for cardiac arrhythmia that occurs from fluid loss through diarrhea or lack of fluid intake from the mother during illness. Infants are highly resistant to the *Shigella sp.* until about six months of age, but there have been numerous cases of new born infections reported, possibly due to transient bacteria present in the birth canal.

Fetal Risk:	Dehydration, cardiac arrhythmia, toxic shock (newborns).
Precautions:	Disposable gloves.
Diagnosis:	Stool Culture.
Treatment:	Antibiotics, fluid therapy.

Toxoplasmosis

Toxoplasmosis is caused by the protozoa *Toxoplasma gondii* and is common in mammals and birds. The most common transference to humans comes from felines, but it should be noted that transmission is common from all carnivores and the protozoa are also commonly found in the soil. Typical infection comes from fecal/oral contact, but the protozoa are highly infectious when they become aerosolized (wet or dry). The protozoa are shed in the feces of infected animals, and the organisms become highly infectious after 24 hours. The fetus is at great risk in the first trimester but should be considered at risk throughout the pregnancy.

Fetal risk:	Mental retardation, blindness, fetal death
Precautions:	Disposable gloves, respirator
Diagnosis:	Blood test. Please note: Pregnant mothers should be tested immediately upon discovery of pregnancy to establish a baseline exposure level to Toxoplasmosis. (This is where you have to explain to your physician exactly what your job entails and the possibilities of previous long-term exposures).
Treatment:	Antibiotics

Viral Hepatitis

Hepatitis is an inflammation of the liver caused by a bloodborne pathogen or virus. The specific viruses have been labeled Hepatitis A, B, C, D, and E. Type A, once referred to as "infectious hepatitis" is most commonly spread by fecal/oral contact or through infected water or food. Zoonotic transmission is common in great apes, but the virus can also be found in other mammals. Mothers are at risk during their entire pregnancy and the virus can be spread through intimate contact. Any intimate contact, blood/blood contact, or fluid/fluid contact can spread Hepatitis B, once known as "serum hepatitis". Hepatitis C is similar to Type B, but transmission of the virus through the exchange of simple fluids (saliva) is rare. The fetus is at risk of contracting hepatitis while in the birth canal or from sympathetic debilitation when the mother is being treated for symptoms of hepatitis.

Fetal Risk:	Liver damage, jaundice, cardiac arrhythmia
Precautions:	Disposable gloves, mask, caution with sharps
Diagnosis:	Serum blood test, liver function analysis
Treatment:	Symptomatic unless acute. Vaccine for Hepatitis A/B is available and recommended for all zoo keepers.

Medications

Most zoo keepers dispense medication to animals in some form. Continuous exposure to some types of medications, especially antibiotics, can cause liver damage in healthy adults. The ability of most medications to cross the placental barrier is well known. Although antibiotics may be prescribed for a pregnant woman, the manufacturer assumes a 7-10 day treatment period. Continuous levels of skin exposure that zoo keepers or veterinary technicians encounter when administering medications may be hazardous. Utilize disposable gloves when handling all medications.

Food

Handle all produce, animal by-products (i.e. bones, eggs) and wet carnivore diets with disposable rubber gloves to protect against *Salmonella* sp. that are commonly found in unwashed produce and may be found in raw or uncooked meat.

Chlorinated/Brominated Gases and Fumes

Animal keepers utilize chlorine in one form or another on an almost daily basis. In powdered form, the fumes from these chemicals are noxious and they cause shortness of breath, watery eyes and headaches. In concentrated solution, these chemicals can be deadly to those who work with them. When pregnant and utilizing Chlorine or Bromine in powdered or puck form, always use gloves and a half-mask respirator to spread, to clean, or maintain erosion type feeders. Constant exposure to Chlorine or Bromine fumes will cause respiratory distress and may cause cardiac arrhythmia in the fetus.

Anesthesia Compounds

Inhalation exposure to anesthesia compounds such as Halothane, Isoflurane, etc. during a veterinary procedure can have disastrous affects on the fetus. Most surgical suites are vented or have recovery systems, but leakage around the mask or endotracheal tube will release the agent into the air. The best method to counteract exposure is avoidance. If you have to be in the surgical suite, utilize a half-mask respirator with organic cartridge(s).

Radiographs

Radiographs are one of the most common but often overlooked hazards to your unborn child, especially in the first trimester. It is quite common, during the crisis of diagnosing a traumatic injury or illness to one of "your" animals that you may forget your medical condition while radiographs

are being obtained. If you even suspect that you are pregnant, leave the animal restraint to someone else and leave the area. Lead shields are not designed as protective devices against radiation exposure for pregnant women.

This list is not intended to be complete or all encompassing and does not even consider other mammalian transmissible zoonotic diseases such as Herpes simplex, Simian Herpes Virus (Herpes B), or Tuberculosis, all of which would lead to acute health problems for the parent and fetus.

At a glance, this list is certainly frightening to any expectant parent in the zoo profession. However, consider that you and your co-workers are exposed to these health threats on a daily basis, with minimal risk. It boils down to a little pre-planning and utilizing the personal protective equipment that most effectively protects you and your unborn child. Practice good hygiene, read your Material Safety Data Sheets, and limit your exposure to chemicals and medications. You or your partner should leave all zoo uniforms, especially work shoes, at work.

Happy parenting, because these worries over your child will most certainly not be your last!

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Legislative/Conservation Update

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Comment Period Reopened for Proposed Revisions to ESCA's

The U.S. Fish and Wildlife Service (USFWS) announced in February that it is reopening the comment period on a proposed revision to regulations governing permits for various types of activities involving federally designated threatened and endangered species. The proposal, entitled "Revisions to the Regulations Applicable to Permits Issued Under the Endangered Species Act," was originally published in September 2003 with comments due by November 2003. The proposed revision is being reopened for comment because of apparent confusion with a separate policy proposal involving foreign species that was open for comment during the same time period.

The proposal would revise existing regulations to more clearly describe the full range of activities for which permits can be issued to enhance species survival, primarily those activities related to domestic species in conjunction with Safe Harbor Agreements and Candidate Conservation Agreements with Assurances (CCAAs). These agreements are intended to remove potential disincentives for landowners to manage their property for the benefit of listed and candidate species. Some landowners have made it clear that they need a better understanding of the obligations and benefits provided by Safe Harbor Agreements and CCAAs before they will participate in agreements.

In many cases, property owners may be willing to actively help protect endangered or threatened species through Safe Harbor Agreements or CCAAs only if they can limit the area to be occupied by the species through intentional take, particularly when species expansion would interfere with activities outside of the area covered by the agreement. The proposed rule is intended to expand citizen conservation by addressing landowner concerns and more fully describe the range of activities that can be permitted in conjunction with a Safe Harbor Agreement or CCAA.

The proposed rule would specifically make change in the regulations for permits associated with Safe Harbor Agreements and CCAAs to more clearly state the Service's ability to authorize "take" (capturing, killing or otherwise disturbing or harming a species or its habitat) in conjunction with activities such as reintroduction and habitat restoration when the benefits of habitat protection or restoration provided by the associated agreements outweigh any impacts caused by anticipated take of protected species.

By ensuring that traditional agricultural uses can continue alongside habitat improvements, the USFWS feels the provision can make it easier for landowners to enter into SHAs and CCAAs that will provide overall benefits to the species. *Source: USFWS Press Release 23 February 2004*

Norway Whale Hunt Continues Despite Ban

The Norwegian government continued to defy an international ban on commercial whaling as it announced 25 February 2004 the dates for the beginning and end of this year's whale hunting season. The hunting of whales, outside of the North Sea, will be permitted from 10 May to 31 August. The quota for 2004 has been set at 670 whales. In 2003 whalers were unable to catch the entire 671 quota of whales due to bad weather conditions. Only 634 whales were killed.

In defiance of an international ban on whaling which began in 1986, Norway is the only country in the world to authorize commercial whaling. In practice, however, Japan and Iceland allow whaling. Those countries claim that the hunting is only "for scientific purposes." *Source: Animal Planet News 26 Feb. 2004*

Ban on Nepal Monkey Exports Proposed

A number of organizations are joining forces to call world-wide attention to the agreement between the Nepalese government and a local non-governmental organization (NGO), the Natural History Society of Nepal (NHSN), to breed thousands of rhesus monkeys for supply to U.S. laboratories. According to the agreement, the Nepalese government will supply 150 monkeys to the U.S. as soon as NHSN establishes the basic infrastructure to breed them.

The Washington National Primate Research Center is responsible for establishing the breeding program in Kathmandu, which it launched in 2001. The Center also supports programs in Indonesia and Russia. Animal rights activists claim that the U.S. used over 14,000 monkeys for research each year.

"This is not a conservation effort that will benefit the local community or biodiversity," said the president of Resources Himalaya, a NGO working to promote wildlife conservation. "This kind of breeding is purely for biomedical research where our monkeys undergo enormous suffering as they are observed for physical and psychological responses to drugs," he said.

The Nepalese government can earn up to \$300 (U.S.) per monkey for sale to American labs. Two years ago the NHSN proposed sending monkeys to labs in other countries but dropped the proposal after an uproar ensued led by conservation activists. A key ally in the movement to save the monkeys is the International Primate Protection League, which has asked the Nepalese government to prevent monkey-breeding labs from being started in the first place.

"The U.S., keen to conduct bioterrorism experiments on primates, is desperate for lab monkeys, which is why they turn to countries with weak legislation and a willingness to sacrifice its precious wildlife, such as China, Vietnam, Indonesia, and lately Nepal," said a spokesperson for one of the NGOs involved in the mounting opposition to the plan.

Rhesus macaques are the subject of choice for many biomedical and behavioral research laboratories mainly because of their willingness to breed in captivity. Nepal's neighbor, India, banned the export of rhesus monkeys in 1977. China is the largest exporter of monkeys for biomedical research, while the U.S. is the biggest importer. *Source: Nepal Times Issue #148 and 180, posted online 20 February 2004*

Interior Secretary Announces Proposal to List Sea Otters as Threatened Under ESA

Interior Secretary Gale Norton announced in February that the USFWS is proposing to list sea otters in Southwest Alaska as threatened under the Endangered Species Act because of a precipitous decline in their population in recent years. Almost half the world's sea otters used to live in Southwest Alaska, but researchers have seen as much as a 68 percent drop in their numbers since the mid-1980s. No one is certain yet what is causing this, but listing this population as threatened under the Endangered Species Act will be an important step in discovering the reasons and reversing the decline.

Specifically, the Service is proposing to list the southwest Alaska Distinct Population Segment of the northern sea otter (*Enhydra lutris kenyoni*). Under the ESA, "species" is defined broadly to include species, subspecies, and Distinct Population Segments, or DPS, of vertebrate species. A DPS is a portion of a vertebrate species or subspecies that is discrete from the remainder of its taxon and also is significant to that taxon.

Between the mid-1700s and the early 1900s, commercial hunting of sea otters brought the entire species to the brink of extinction. When they became protected from commercial harvest in 1911 under the International Fur Seal Treaty, only 13 small remnant populations were known to still exist, including six in southwest Alaska. Following this protection, otters from 11 of these populations gradually recovered and re-colonized their former range in southwest Alaska and some other portions of their historic range.

A substantial decline in the southwest Alaska otter population appears to have begun in the mid- to late 1980s. In the Aleutians, there were approximately 55,000 to 74,000 sea otters in the mid-1980s, representing almost half of the world's estimated population of sea otters at that time.

Aerial surveys since that time, however, indicate a progressive decline in the number of otters in the Aleutians, where the current population is estimated to be less than 9,000 animals. Survey results also show substantial declines have occurred in the Alaska Peninsula, where the counts of otters have declined by more than 65 % since the mid 1980s. In the Kodiak Archipelago, surveys indicate the number of otters has declined more than 55 % since the late 1980s.

Overall, the DPS has declined an estimated 56 to 68 percent over the past 10 to 15 years, and recent surveys indicate the decline is continuing. The cause of the population decline is not clear. Production of young does not appear to be reduced, nor is there evidence that starvation, disease, or contaminants are involved. There also is no evidence that entanglement in commercial fishing gear or competition

with fishermen for prey species is playing a significant role in the decline, and annual subsistence harvest by Alaska Natives is believed to be too low to contribute significantly to the decline. Some evidence points to predation by killer whales as a possible cause of the decline in the Aleutian Island chain.

The proposed rule to list the southwest DPS of the otter as threatened does not include a proposal for designating critical habitat. As explained in the proposed rule, critical habitat is not determinable at this time. If the southwest Alaska DPS of the sea otter is listed as threatened under the ESA, a recovery plan would be developed for it. This plan would bring together efforts by Federal, State, Alaska Native groups, local agencies, and private entities for the conservation of the DPS. *Source: USFWS Press Release 5 February 2004*

President Bush Seeks More Than \$1.3 Billion for USFWS in 2005 Budget

The President is requesting more than \$1.3 billion — \$22.6 million more than last year — for the USFWS's 2005 budget. Among the key features of this budget package are an increase for partnership and cost-share grant programs under the Presidents Cooperative Conservation Initiative and \$2 million for a new Science Excellence Initiative. Budget increases for hatcheries and migratory bird programs are also included.

New funding in the 2005 budget to support the Cooperative Conservation Initiative includes: (1) \$50 million for Landowner Incentive Grants that provide state and tribal fish and wildlife agencies grant funds needed to establish or expand habitat protection and restoration programs on private land for "at risk" species. (2) \$10 million for Private Stewardship Grant programs that provide cost-share grants to landowners for wildlife conservation. (3) \$80 million for the State and Tribal Wildlife Grants Fund that aids wildlife conservation on State and Tribal lands. (4) \$54 million for the North American Wetlands Conservation Fund that provides matching grants to private or public organizations and individuals to carry out wetlands conservation projects in the United States, Canada, and Mexico. (5) \$90 million for the Cooperative Endangered Species Conservation Fund that helps states increase participation in a wide array of voluntary conservation projects for candidate, proposed and listed species. (6) \$12 million for the National Wildlife Refuge System's Challenge Cost Share program that provides grants that match federal and private funds for conservation projects on refuges.

Other notable parts of the Services 2005 budget: (1) The Migratory Bird Management program would receive more than a \$4.5 million increase for permits and monitoring. (2) The Endangered Species program will receive an extra \$5.0 million, for a total of more than \$17.2 million, in its listing budget to alleviate the backlog in dealing with new listings and critical habitat designations. (3) A total of nearly \$16.9 million will help address maintenance needs at national fish hatcheries. (4) The National Wildlife Refuge Systems Law Enforcement budget would increase more than \$3 million. *Source: USFWS Press Release 2 February 2004*

Fox Subspecies Receive Endangered Listing

Four subspecies of fox inhabiting the Channel Islands off the coast of Southern California have received an ESA endangered listing says the USFWS. The Santa Cruz, Santa Rosa, San Miguel and Santa Catalina island foxes each occupy separate islands and their numbers have dropped dramatically since 1994 primarily due to predation by golden eagles and disease. A 2000 petition by the Institute for Wildlife Studies and Center for Biological Diversity resulted in a December 2001 proposal by the USFWS to protect the subspecies under the ESA. Captive breeding programs have been implemented for all four subspecies with 100 animals in the wild on Santa Cruz, 200 on Santa Catalina, seven on Santa Rosa and none in the wild on San Miguel. *Source: GREENlines Issue #2061 3-9-04*

New Mammal Found in Arizona

A small shrew that "weighs less than a nickel but eats like a pig" has become the first new species of mammal discovered in Arizona since 1977 reports the *Arizona Daily Star*. Officially *Notiosorex cockrumi*, little is known about the desert shrew's population or status other than it is found in southeastern Arizona and northern Sonora but "scientists say the naming of a new mammal especially in the U.S. is big news." Although it is "almost identical" to desert shrews that are found in desert grasslands from California to Texas, the two species don't interbreed and "biologists suspect the shrew's genes may have branched off because the species became isolated." *Source: GREENlines Issue #2040 2-7-04*

Pinnacles Condors Doing Well

Six California condors released in Pinnacles National Monument in December and January are "adjusting well, exploring distinctive rock outcroppings" reports the *San Jose Mercury News*. Two more birds have arrived at acclimation pens and four more were expected by the end of March as part of "the ongoing effort to restore 12 of North America's largest bird species back to the 24,000 acre national park by year end." Source: *GREENlines Issue #2058 3-5-04*

Boycott Bites Asian Paper Company

Office Depot, "the largest office-supply company in the world," has agreed to join a World Wildlife Fund- organized boycott against Asia Pulp and Paper Co., the 10th largest paper company, to protest clear cutting that is destroying the rain-forest habitat of endangered Sumatran elephants and tigers reports the *Miami Herald, Knight Ridder*. The decision to stop doing business with the paper giant comes as a result of an Office Depot policy adopted last April to not sell "products that come from rare and vulnerable forests, or from forests with exceptional conservation values." Source: *GREENlines Issue #2053 2/26/04*

Drug Linked to Asian Vulture Crash

A team of international scientists has discovered that a drug widely used to treat livestock is "responsible for an alarming decline in three species of Asian vultures" reports *Environmental News Service*. The study published in *Nature* is "the first known case of a pharmaceutical causing major ecological damage over a huge geographic area and threatening three species with extinction." Vultures that eat livestock recently treated with the drug, diclofenac, die from kidney failure and over the past decade populations of Oriental white-backed, long-billed and slender-billed vultures have declined by 95% in many areas of south Asia. "Declines of this magnitude in once common species have not been seen since the extinction of the great auk or the passenger pigeon in the 19th century." Source: *GREENlines Issue #2040 2-7-04*

Leatherbacks Collapsing

A new report reveals that leatherback sea turtle numbers have "fallen by 97% in 22 years" and conservationists fear "the species could be extinct within no more than a decade" reports *BBC News*. The report by Conservation International found that fishing practices and egg poaching were also putting six other species of sea turtle at risk of extinction, "though not necessarily as acutely." Scientists confirm that Pacific leatherbacks "currently face an annual mortality rate up to 30" and that "without dramatic intervention we can expect to see them disappear in as soon as a decade." Source: *GREENlines Issue #2056 3-2-04*

Delegates Commit to Plan But Pledge No Money

Delegates from some 120 countries wrapped up the U.N.'s 7th Conference of Parties to the Convention on Biological Diversity by agreeing to "an ambitious plan to expand the world's protected areas and improve their management" to "ensure there would be sufficient protected areas by 2006 to safeguard the several thousands species classified as critically endangered" reports *The Guardian* (UK). While conservationists welcomed the agreement, concerns remained that there was no formal commitment to contribute more funds for conservation programs in poor countries. Under the agreement each country is required by 2010 to designate 10% of its territory as protected with marine zones included in the plan by 2012. Source: *GREENlines Issue 2052 2/25/04*

Sixth Great Extinction Status Report

A consensus of biologists finds that the planet is "moving toward another mass extinction that could rival the past five" and unlike the others humans will witness it "first-hand" says the Earth Policy Institute. Also unlike the past five, after which "it took upwards of 10 million years for biological richness to recover, this mass extinction event is being caused by one of the Earth's species - human beings. The greatest threat to the world's living creatures is the degradation and destruction of habitat, affecting 9 out of 10 threatened species," while "direct human exploitation of organisms, such as through hunting and harvesting, threatens more than a third of the listed birds and mammals." FYI: <http://www.earth-policy.org/Updates/Update35.htm> . Source: *GREENlines Issue #1061 3-9-04*

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Note: Those presenters who correctly submitted their manuscripts on time for inclusion in the 2003 Conference Proceedings will receive one gratis copy. All others wishing a copy must place an order.

Papers included: To Russia with Love: A Synopsis of the Tenth Year of the Russian Crane Project with a Look to the Future ~ Guam Rail Reintroduction Project ~ Protocol Importance in the Husbandry of Gabriella's Crested Gibbons ~ AAZK Cooperative Partnerships: Working with Local and Regional Organizations on Conservation Projects ~ Raising Asia...Successfully Raising a Sloth Bear Cub ~ Experiences with Caribbean flamingo *Phoenicopterus ruber ruber* Chick Hand-rearing at the Birmingham Zoo ~ Cost-free Fundraising Through Printer Cartridge Recycling - Building Your Donor Network ~ Phoenix Rising: Tidbinbilla Nature Reserve ~ Recall and Crate Training in a Free-flight Aviary ~ Tracking Orangutan Ovulation Cycles Through Cytology ~ The Living Desert's Cheetah Ambassador Program ~ ABCs from A to Z: Animals, Business, and Conservation in Aquariums and Zoos ~ Managing the Socialization of a Speke's Gazelle at the Saint Louis Zoo ~ Perceptions and Data: The Effect of Estrus Cycles on a Non-reproductive Chimpanzee Group ~ The Evolution of the Night Keeper at Disney's Animal Kingdom ~ The Lake Malawi Aquarium and Quarantine System at Lincoln Park Zoo's Regenstein African Journey ~ Auditory and Olfactory Enrichment Trials in the Cougar *Felis concolor* ~ Project Golden Frog/Projecto Rana Dorada ~A Dog-gone Wild Time at the Minnesota Zoo ~ Behavior Management + AAZK + Zoo Members = Fun & \$ for Conservation at the Minnesota Zoo ~ "Are you looking for that furry black thing?" A Mixed Species Exhibit Featuring Malayan Tapirs and Binturongs Makes for Some Strange Situations and a Wild Occupation for Zoo Keepers at the Minnesota Zoo ~ Developments in Breeding and Managing Cockatoos ~ Disney's Animal Kingdom Veterinary Services Wildlife Program ~ Transformation from Menageries to New Millennium Conservation Centre ~ The Survivorship of Captive-bred, Released Louisiana Pine Snakes ~Tapping Teenage Talent ~ The Addition of a New Lemur Species into an Existing Multi-species Lemur Exhibit at the Hattiesburg Zoo ~ Developing a Multi-functional Callitrichid Nest Box to Combine with Operant Conditioning to Increase Animal Husbandry and Decrease the Potential for Stress when Chemical Restraint is Necessary ~ Environmental Enrichment: Achieving Zoo-wide Animal Enrichment Days Through Successive Approximation and Positive Reinforcement ~ The Role of Woodland Park Zookeepers in a Ferruginous Hawk Satellite Telemetry Project ~ A Zookeeper's Role in Exhibit Design ~ Striving for Successful Births in a Young Pair of Golden Lion Tamarins (*Leontopithecus rosalia*) ~ For Conservation's Sake: The Clouded Leopard Project ~ Translocation of Blue and Gold Macaw (*Ara ararauna*) into its Historical Range on Trinidad ~ *Homo sapiens* ~ The Hardest Animals to Train - "Running a Successful Internship Program at Your Facility" ~ Chiropractic Care in Animals - "An Alternative Approach to Geriatric Care" ~ Wildlife Management in Metropolitan Cleveland: Taking Conservation Beyond the Zoo ~ The Best Zoos in the 21st Century ~ Surplus Animals: Stewardship on the Ark ~ So Many Cats, So Little Time ~ The Enrichment Challenge ~ Changing Exotic Animal Ownership Regulations ~ When Plan A Becomes Plan Z: The Challenges of Shifting a Resistant Pair of Black Rhinoceros (*Diceros bicornis*) to a New Exhibit Through Positive Reinforcement and PATIENCE ~ Welcome to the Information Age: How to Find, Evaluate, and Use the Information You Need ~ Making a Difference with Bowling for Rhinos. **Poster Abstracts:** A Multivariate GIS Model to Determine Black Bear (*Ursus americanus*) Habitat Suitability in Eastern Ohio ~ Alternatives to Parent-rearing in Pteropus Species at the Lube Foundation ~ Conditioning Male Rockhopper Penguins (*Eudyptes chryocome*) to Accept Voluntary Semen Collection ~Penguins and Fish Can Co-exist ~ Improvised Rearing of Red-bellied Piranha (*Pygocentrus nattereri*) in an Endothem-dominated Institution ~ Project Golden Frog ~ Cleveland Metroparks Zoo; Building a Breeding Herd ~ Enrichment: From Animals to Audience ~ Who Says You Can't Teach an Old Ram New Tricks? ~ Survival of the Fishing Cats: Successes and Failures in Fishing Cat Reproduction at the San Francisco Zoo ~ Developing Improved and Safer Control Measures for Helminth Parasites of Bears in Zoological Parks ~ The Enrichment Tree. **Workshops/Panel Discussions/RAP Sessions Summaries:** AAZK, Zoo Animal Staff, and Research - Why it's a good idea and how to get involved ~ Advances in Animal Keeping in Zoos and Aquariums ~ A new AAZK-AZA Professional Keeper Training Program ~ Amphibian Workshop ~ Animal Welfare, Enrichment, and the AZA: What do they mean to keepers? ~ Australasian RAP Session ~ Primate Workshop and More!

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Chapter News Notes

West Texas AAZK Chapter

Greetings from the West Texas AAZK.

With the start of the year, our Chapter held officer elections and the following are the new officers:

President.....Stephanie DeGesero
Vice-President.....Denise Ibarra
Secretary.....Carey Streicher
Treasurer.....Diane Longenecker



The year 2004 has started very well with our most recent fundraiser being the official clean-up crew for the Abilene Kennel Club dog show. It was a great way to get our name out there and we made a good amount of money for very little work. It's something that other chapters may want to consider doing with their local kennel club organizations.

We have several new events planned for this year including participating in the zoo's various special events and sending as many keepers as possible to this year's AAZK conference in Dallas.

Also, the West Texas AAZK would like to invite any keepers attending the National Conference to visit our zoo while you're in the Lone Star state. It's about a three-hour drive from Dallas, but we'd like to think it's worth the drive.

--Stephanie DeGesero, President

Southern Ontario Chapter

Since it has been awhile since our Chapter submitted an update, we thought it was high time to do so. We have been busy with our fundraising efforts since we had the National AAZK Conference in 2001. We decided to continue our major fundraiser – "Keeper for a Day", but we toned it down to six times a year instead of twelve. Along with a couple of other minor fundraising events, we manage to fund a lot of conservation organizations and help our members attend conferences. We provide matching funds to members who want to support conservation efforts, in order to encourage them to fundraise on their own. In 2003 these included Canadian Association for Bushmeat Awareness, Sumatran Orangutan Society, International Elephant Foundation, Fauna Foundation, Borneo Orang Society, and EMA Conservation Fund, totaling just over \$7,000 (CDN). With the leftover funds from 2003, we made a donation to National AAZK, accepting the Cleveland Challenge to the tune of \$1,000. We dare another Chapter to beat that.

At our first general membership meeting of 2004, we elected officers for a new two-year term. Results are as follows:

President..... Eric Cole
Vice President.....Karen Buckle
Secretary.....Nicole Balaka
Treasurer.....Vernon Presley
Professional Development Officer.....
Marc Blanchard



Our members and executive have committed to doing a BFR event in 2004. Unfortunately, we have not participated for a few years, so we are hoping for a big event with lots of new eager participants.

The snow is leaving Toronto Zoo and we look forward to the warmth of summer.

Greater Houston Chapter AAZK

Another year has come and gone, so it's time for our year-end review. First off, I would like to thank our 2003 officers for the wonderful job they did and would like to introduce the 2004 officers:

President.....Jennifer McLain
Treasurer.....Susan Shepard
Secretary.....Kim Shotola
Liaison.....Stephanie Bledsoe

The Greater Houston Chapter had great success in 2003! We raised over \$10,000.00 for conservation, enrichment and keeper professional development. Conservation projects that were supported with the monies raised include: Center for Ecosystem Survival (\$944), Wildlife Rehabilitation of Texas (\$125), Turtle Survival Alliance (\$125), International Iguana Foundation (\$125), Adopt-A-Tapir with Charles Foerster's Corcovado Park Tapir Program (\$250), Louisiana Pine Snake SSP (\$250), and the Mountain Gorilla Conservation Fund (\$1000). We hosted a BFR event which raised \$5,536.00. We also hosted a Creature Carnival, raising \$1,028.00 which went to Texas Marine Mammal Stranding Network in Galveston, TX.

Now on to 2004! So far this year, we've held our annual Bake Sale that brought in \$700 which will be used for a conservation project voted on by Chapter members.

Another fun project that we participated in for the second year running was the Texas Parks & Wildlife Abandoned Crab Trap Removal Program (ACTRP). The program was started in 2001 in order to reduce the number of crab traps that were abandoned or lost, which contributed to 'ghost fishing', the continued unattended fishing of the trap once it has been lost. Our Chapter was able to collect an estimated 200



traps, which contributed to the coast-wide collection of 3,571 traps.

I would like to take a moment to recognize our Chapter's and the zoo community's loss of Wendy Duffield. Wendy was a dedicated elephant keeper, an inspiring Vice President for our Chapter and a true friend. She will be greatly missed, but not forgotten.

*--Stephanie Bledsoe, Liaison
Greater Houston Chapter*

**What's your AAZK Chapter been up to? Send your Chapter News to the Editor at:
akfeditor@zk.kscoxmail.com**

Institutions wishing to advertise employment opportunities are asked to send pertinent data by the 10th of each month to: Opportunity Knocks/AKF, 3601 SW 29th St., Suite 133, Topeka, KS 66614-2054. Please include closing date for positions available, and when setting these dates keep in mind that because of bulk-mail, most readers do not receive their AKF until the middle of the month or later. There is no charge for this service and fax or e-mail listings of positions which become available close to deadline are accepted. Our Fax is (785) 273-1980; e-mail: akfeditor@zk.kscoxmail.com< Listing may be sent as MS Word attachment. We are no longer located at the Topeka Zoo, so please note new address to avoid delays in processing.

• Catoctin Wildlife Preserve and Zoo (Thurmont, MD) is looking for professionally-oriented people to grow with us. Information about our facility may be viewed online at www.CWPZoo.com< The following four (4) positions are available immediately and until filled. Duties include all aspects of animal care including feeding, cleaning, observations, monitoring, interaction with the public and assistance with department improvement projects. Salary is commensurate with experience (range: \$16,000 to \$25,000). Support for medical, dental and prescription health care and attendance at AAZK and other conferences and seminars. Paid vacation after one (1) year. Flexible work schedule and personal days.

Send cover letter and resumé with salary requirements to R. Hahn, Chief Animal Person, Catoctin Wildlife Preserve and Zoo, 13019 Catoctin Furnace Road, Thurmont, MD 21788 or fax at (301) 271-2673, or email to Rickhahn@CWPZoo.com<

Lead Animal Care

Responsibilities: Supervises all Animal Care positions including volunteers and seasonal interns. Must be knowledgeable in the basic husbandry and natural history of mammals and birds, well-organized and able to work well with all staff and visitors. **Requirements:** Must have at least five (5) years experience in an open-to-the-public facility and at least three (3) years of supervisory experience in middle management. College degree a plus but will substitute experience for sheepskin. Must be able to finish the standard requirements for this position description. Salaried. Reports to General Curator/Registrar.

Animal Caretaker I

Requirements: requires one (1) year full-time minimum experience in the care, handling and feeding of animals in a public or private setting. Experience with a wide range of exotic hoofstock and small mammals preferred. Must be able to lift 100lbs. and work some weekends and holidays.

Avian Specialist

Works primarily with psittacines and gallinaceous birds. Flamingos, ibis, doves, kookaburra, mud hens, condor, owl, cranes and ratites are also in collection. **Requirements:** at least two (2) years in a private or public facility maintaining and breeding the above taxa. Knowledge of incubation and rearing chicks is required. Reports to Lead Animal Care.

Reptile Caretaker II

Requirements: requires minimum of three (3) years full-time experience in an exhibition setting working with a diverse collection of reptiles, including venomous with an emphasis on the propagation of tortoises, varanids and boidae. Must be neat and creative with exhibit design and maintenance. Good record-keeping skills a must.

Zoo Keeper - Hollywild Animal Park, Inman, SC

Seeking to hire permanent keeper. Great team environment and opportunities for growth. To apply: Please mail or fax resumé including list of references to Lucia Meeks - Hollywild Animal Park - PO Box 683, Inman, SC 29349 - Fax 864-472-6336 You may also submit by e-mail to jobs@hollywild.com - Please visit our website at www.hollywild.org - Applications accepted through 30 April 2004. **Requirements:** include a BS in animal science or related animal fields as well as minimum of two (2) years paid experience working with a mammal collection in a zoological setting. (Extensive animal experience may be substituted for a degree.) Applicant must be self-motivated, have a strong work ethic, a willingness to learn, good observation and communication skills and be able to work and interact well with others in a team environment. Applicant must be in good physical condition and have the ability to lift up to 60 pounds. Must have knowledge and experience operating basic farm equipment and tools, and the ability to work outdoors year-round in a moderate climate. Must possess a valid Driver's License before hire and maintain such for the duration of employment in this position. This is a non-smoking, drug-free environment. Weekend and holiday work is necessary. **Responsibilities:** Keeper will be working with a diverse collection of animals to include Asian elephant, rhino, numerous hoofed animals, felines, bears, canines and primates. Responsibilities for this hands-on positions include, but not limited to, providing daily cleaning and feeding, enrichment, observation, record keeping and reporting, exhibit maintenance, making minor exhibit modifications, assist in hand-rearing of young when necessary, plus assisting in capture, restraint, and veterinary procedures for animals in respective department.

Animal Keeper/Guides - Soco Gardens Zoo, Maggie Valley, NC

Several positions available for 2004 season, May through October. Salary \$240.00 per week, living quarters, utilities and uniforms all furnished. Please send cover letter and resumé to: Jim Miller, Soco Gardens Zoo, 89 Evans Cove. Rd., Maggie Valley, NC 28751, as soon as possible. **Requirements:** Paid zoo experience preferred but, volunteer experience acceptable; non-smokers; applicants must have strong, audible voices, neat appearance, good personalities, and must work well with co-workers as well as with the public. **Responsibilities:** duties include daily animal care of various primates, large and small cats, bear, parrots, wallaby, various reptiles, and others; exhibit cleaning and maintenance; various other maintenance duties; and educational lectures in a tour situation. Must lecture on both non venomous and venomous reptiles. Also, must have experience in handling non-venomous reptiles or a willingness to learn. Must be willing to work six days a week, including weekends and holidays.

Bird Keeper - Sacramento Zoological Society, Sacramento, CA

Send resumé to: Maggie Liguori, Animal Collections Manager, Sacramento Zoo, 3930 West Land Park Dr., Sacramento, CA 95822; (916) 264-8817; mliguori@cityofsacramento.org We offer good benefits (in a city with no snow) and lots of fun! **Position open until filled.** **Responsibilities:** looking for attention to detail in the areas of diet preparation, behavioral enrichment, observation, and research. Our zookeepers are good communicators, project-oriented and able to prioritize across seasons. **Requirements:** requires AS degree with two (2) years experience in a zoo bird collection, related experience may be substituted.

Head Bear Keeper - The Animals Asia Foundation, Chengdu, Sichuan Province, China.

The position will be for a minimum of 1 year. Please look at our website (www.animalsasia.org) for further information of the type of work we perform. If interested in joining the team please e-mail your CV and expected salary to info@animalsasia.org. Closing date for applications **21 April 2004**. Will work at Asiatic Black Bear Rescue Centre. Currently there are 130 bears on-site, with another approximately 120 arriving this year. The Head Bear Keeper will be working under the direction of the Veterinary Director. **Responsibilities:** They will be responsible for the management of the local bear workers. Implementing and supervising enrichment programs and liaising with the consultant behavioural expert. **Requirements:** The applicant must have at least four (4) years bear or large carnivore experience. Speaking Mandarin Chinese would be an advantage but not essential! (translators are provided).

Marine Science Program Director - Camp Orkila YMCA, Eastsound, WA

Contact: Paul Kamin, Camp Director; YMCA Camp Orkila; PO Box 1149, Eastsound, WA.; pkamin@cs.seattleyymca.org Salary range is \$30K-\$35K, and could include housing. Full time benefits include medical, dental, and life insurance, and 12% paid retirement. The Seattle YMCA is an equal opportunity employer YMCA Camp Orkila is seeking a director for our Marine Sciences programs to work at our beautiful Orcas Island site. **Responsibilities:** Position is responsible for program leadership of summer marine day and resident camps, training of 25 naturalists to work with 6500 middle school students in environmental education programs, and new grant funded programs including King Salmon Stewardship Institute for high school students, and a Marine Science Lecture Series for local Orcas Island community. Also responsible for care of a wide variety of species in our \$1M Marine Science Center that features 18,000-gallon aquarium, a small salmon hatchery, a popular touch tank and other similar educational exhibits. **Requirements:** Saltwater exhibit and system maintenance experience and animal collection skills would be significant plus.

Marine Science Specialist (Internship or Seasonal employment options) - Camp Orkila YMCA, Orcas Island, WA

Contact: Paul Kamin, Camp Director, Camp Orkila YMCA, PO Box 1149, Eastsound, WA 98245; pkamin@cs.seattleyymca.org; phone - 360-376-2678; fax 360-376-2267. Position could qualify as an internship. Housing would be available at camp. Salary commensurate with experience. Orkila is a 300-acre facility with 500+ beds, 17,000 annual guests, and a half-mile of beach on the NW corner of Orcas Island. Equal Opportunity Employer. This seasonal position will work from early spring through the summer. Camp Orkila operates a \$1million Marine Salmon Center and a variety of educational programs dedicated to Marine Sciences. Such programs include both day and resident summer Marine Camp programs; a high school student focused King Salmon Stewardship Institute, Marine Sciences units for over 6500 middle school students in environmental education and more. This position is designed to help Orkila transition with a new full time Marine Sciences Program Director. **Requirements:** Candidate should have background to manage the care of the Marine Salmon Center and the "guest" animals in our 18,000-gallon aquarium, touch tanks, salmon hatchery, and other displays.

Animal Handling and Presentation Internship - Point Defiance Zoo & Aquarium, Tacoma, WA

Now accepting applications for internships for the summer of 2004. This program is designed to provide participants with practical learning experience and knowledge in the field of animal husbandry, animal

training and handling, and public presentations. This is an UNPAID internship and requires a commitment of 40 hours per week (including weekends) during the months of June, July and August. The internship is open to students currently enrolled or recently graduated from a college or university who have completed a minimum of one (1) year course work in the life sciences. **Application deadline is 15 April, 2004.** For more information or to request an application, contact Wild Wonders Outdoor theater staff at (253) 404-3670. **Responsibilities:** Interns will care for and handle a variety of birds, reptiles and mammals as well as participate in informal presentations in the Zoo's new Wild Wonders Outdoor Theater, a covered, 350-seat amphitheater that will feature off-leash and free-flight behaviors.

Environmental Interpretation and Wildlife Care Internship – Trailside Museums and Wildlife Center, Bear Mountain State Park, Bear Mountain, NY 10911-0427. Contact: Jennifer Verstraete at (845) 786-2701 ext. 278 or 265; email – elayne.keith-feller@oprhp.state.ny.us< Start Dates: Summer internship mid-May through mid-August; Fall internship late-August/early September through early November. Internship is unpaid, but provides knowledge and experience; written evaluation gladly given. Possible course credit if intern can arrange it. Interns will work at least three (3) days a week, including one weekend day. No housing available. We reimburse full payment for required pre-exposure rabies series. **Qualifications:** Enthusiasm, comfortable handling animals, motivated to learn. Must be 18 or older; preference given to college student looking for experience in the care of wildlife and in environmental interpretation. **Responsibilities:** 1) Provide care for permanently injured or orphaned park wildlife (mammals, birds, fish, amphibians and reptiles) in zoo setting. Under the supervision of a Senior Zookeeper will prepare food and diets, maintain enclosures and exhibits, and provide enrichment; 2) Interact with the public answering questions, interpreting exhibits, possibly developing and offering short interpretive talks.

Avian Internship – Tracy Aviary, Salt Lake City, UT

Please send cover letter, resumé and references by **1 May 2004** to: Jennifer Evans, 589 East 1300 South, Salt Lake City, UT 84105; Fax: 801-596-7325; Phone: 801-596-8500; E-mail: jennifere@tracyaviary.org The Tracy Aviary is seeking three (3) interns for June, July and August 2004. Aviculture interns will receive intensive hands-on experience in the care and maintenance of a large bird collection. **Responsibilities:** They will participate in all aspects of bird husbandry including cleaning, capture and restraint, record keeping, exhibit maintenance, enrichment, veterinary care, and incubation. Summer interns work daily with the public in our "Parrot Encounter" exhibit. The internship is 40 hours a week, from 7:30am- 4:00pm. Interns have two weekdays off in a row. The Aviary provides housing and a \$300 a month stipend. Interns receive the same on-the-job training as any new aviculture staff member.

Reptile Internship

To apply send a cover letter, resumé, and at least two (2) (preferably 3) references to: Kristen Wiley, Internship Coordinator, Kentucky Reptile Zoo, 200 L & E Railroad, Slade, KY 40376. Or send via emailto: kyreptil@pop.mis.net< Starting dates are flexible, but a minimum commitment of three months covering SPRING (April-June), or SUMMER (June - August), or FALL (September - November) is required. Deadlines for applications each year are: SPRING - February 1st; SUMMER - March 1st; and FALL - June 1st.

The Kentucky Reptile Zoo, a nonprofit organization, is seeking a student intern for the 2004 Fall season. The zoo is an educational exhibit, reptile breeding and venom research facility located near Kentucky's Red River Gorge and Natural Bridge State Park. **Responsibilities:** The intern will assist in the captive maintenance of the zoo's reptile collection, collect admissions to the exhibit, give interpretive talks and interact with the public, assist with educational outreach programs, and perform other duties as assigned. In addition, the intern will be responsible for the completion of at least one research project related to the field of herpetology. The intern will not be involved in the handling of any venomous reptiles. **Requirements:** Desirable qualifications include a willingness to handle snakes and other reptiles on a daily basis, ability to communicate effectively with people, writing skills, orientation to details, and self-motivation. The intern will be required to work both Saturday and Sunday, with days off during the week. Students majoring in the biological or natural sciences are preferred. Interns are required to be either college students or recent graduates. Former interns have arranged for academic credit with their institutions. Interns have also been successful in finding zoo keeper positions, with a hire rate of over 95%! Benefits include experience with the most extensive and diverse collection of snakes in the United States, housing, and \$55/week to cover expenses. Personal transportation is recommended. A valid driver's license is required.

Big Cat Internships – Tiger Creek Wildlife Refuge (TCWR), Tyler, TXAs seen on Animal Planet in "Growing Up Tiger", TCWR is a division of Tiger Missing Link Foundation. Commencement date: On-going. Duration: three (3) months on a month-by-month basis. For additional information to see what past interns have to say about Tiger Creek, visit www.tigercreek.org< Are you interested in learning more about big cats or

establishing a career path working in conservation as a zookeeper, a wildlife manager or a veterinarian? You can Earn Your STRIPES at Tiger Creek and obtain college credit through your college or university at the same time, there are up to four (4) positions available. At Tiger Creek you are more than a worker, you are considered a friend and we strive to build long-term working relations as we know you are the future animal caretakers! Interns are utilized for permanent animal care positions through a qualification system with opportunity for full-time paid animal keeper positions available based upon performance after training. **Requirements:** You provide a six (6)-day work week with a strong commitment for three (3) months, be capable of paying attention to details and follow safety rules, you must have your own transportation to and from the refuge and provide your own food while here. We provide room & board, uniforms, materials and curriculum, indoctrination and safety training. We even throw in use of the "tiger truck" for errands and entertainment adventures that you seek out. Within the new Intern House there is central heat and air, all furnished, a full kitchen, with two full bathrooms, two rooms shared by two students, a shared telephone line for incoming calls, internet access for email and surfing, a VCR, TV and even Satellite so that you and the other interns can enjoy Animal Planet during your off hours! All of this and a few rescued dogs or puppies in the backyard...because we want your stay to be as comfortable as possible while here at Tiger Creek. The Tyler-East Texas area has a lot to offer, there is horse back riding available at no cost to our interns, lakes within beautiful parks, movie theaters, numerous local night clubs and plenty of restaurants and much more.

Big Cat Internship – Wildlife on Easy Street, Tampa, FL

For more information contact Scott Lope at 813-323-5991 or email at catfoto1@aol.com

Two (2) positions available for six-month internship at TAOS accredited non-profit big cat sanctuary. www.wildlifeoneasystreet.com < **Responsibilities** (include but are not limited to): daily husbandry, exhibit cleaning, diet preparation, feeding, operant conditioning and behavioral enrichment for the following species: lions, tigers, leopards, cougars, lynxes, servals, caracals, bobcats, lemurs and other exotic animals. We provide invaluable hands-on experience, on-site housing and utilities, safety training and educational materials. Advanced training and long-term employment opportunities exist for the right candidates. **Requirements:** applicants must be willing to work six days a week, some holidays and follow strict safety guidelines. Hard work ethic and love of animals more important than degree.

Internships - The Florida Aquarium, Tampa, FL

Internships are available in Animal Health, Animal Programs and Husbandry departments. Internships available year-round for varying lengths of time and can be tailored to the individual student's needs. Internships are unpaid but provide valuable hands-on experience. Interested persons should send resumé to: Human Resources, 701 Channelside Dr., Tampa, FL 33602. For more information visit our website at www.flaquarium.org < **Responsibilities:** food preparation, feeding, cleaning enclosures, assist with medical procedures, animal observations, daily record keeping, enrichment activities, assist with training sessions and shows.

Zoo Design Internship - ZooLex, Vienna, Austria

In 2002 the ZooLex Zoo Design Organization started to offer internships. Carlyn Worstell was our first intern. She finished her internship with the ZooLex Zoo Design Organization in September 2003 and is now working with the Wildlife Conservation Society at Bronx Zoo. We offer internships in Vienna, Austria. Interns who stay for a few weeks only, mainly work on the ZooLex Gallery. Interns who stay longer also complete a research project. You will find more information on ZooLex internships here: <http://www.zoolex.org/intern.html> < ZooLex Zoo Design Organization is a non-profit organization registered in Austria. ZooLex runs a professional zoo design website and distributes a newsletter. More information and contact: <http://www.zoolex.org/home.html>

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The Journal of the American
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MAY 2004

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Animal Keepers' Forum is published monthly by the American Association of Zoo Keepers, Inc., 3601 S.W. 29th Street, Suite 133, Topeka, KS 6661-2054. Ten dollars of each membership fee goes toward the annual publication costs of Animal Keepers' Forum. Postage paid at Topeka, KS.

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1974 - 2004

About the Cover.....

This month's cover features a Cotton-top Tamarin (*Saguinus oedipus*) drawn by Robert DiCesare who works in the merchandise department at the Bronx Zoo (Wildlife Conservation Society) Bronx, NY. The cotton-top tamarin is a small monkey weighing less than 0.5 kg (1 lb). It is found in tropical forest edges and secondary forests where it is arboreal and diurnal. The cotton-top tamarin eats fruit, insects, new leaves or buds, small lizards and nectar. Groups of cotton-top tamarins usually include 3 - 9 individuals. Group members are not necessarily all related. In addition to a dominant mated pair and their young, there may be transient individuals, probably young animals of both sexes. The home ranges of adjacent groups overlap. The cotton-top tamarin usually gives birth to twins after a gestation period of 140 days. Up to the 1980's, the cotton-top tamarin was thought to occur from Costa Rica south to northern Colombia. By 1992 it could be found only in northern Colombia. Significant exports for biomedical research contributed to the cotton-top tamarin's decline in the late 1960's and early 1970's. Currently, deforestation is the greatest threat. This species is recognized by the IUCN as endangered. Thanks, Robert!

Animal Keepers' Forum publishes original papers and news items of interest to the animal keeping profession. Non-members are welcome to submit articles for consideration. Articles should be typed or hand-printed and double-spaced. Authors are encouraged to submit their manuscripts on a disk as well as in hard copy form. Manuscripts submitted either on disk or electronically as attachments to an email should be submitted in Microsoft WORD. All illustrations, graphs, charts and tables should be clearly marked, in final form and should fit in a page size **no greater than 5.5" x 8.5"** (14cm x 22cm). Literature used should be cited in the text (Brown, 1986) and alphabetically in the final bibliography. Avoid footnotes. Include scientific name (as per ISIS) the first time an animal name is used. Thereafter use common name. Use metric system for weights and measurements (standard equivalents may be noted in parenthesis). Use the continental dating system (day-month-year). Times should be listed as per the 24-hour clock (0800, 1630 hrs. etc.). Glossy black and white **or** color prints (minimum size 3" x 5" [8cm x 14cm]) are accepted. Clearly marked captions should accompany photos. Please list photo credit on back of photo. Photographs may be submitted electronically as either JPEG or TIFF file attachments.

Articles sent to Animal Keepers' Forum will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for AKF. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the editor. The editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed, appropriately-sized envelope. Telephone, fax or email contributions of late-breaking news or last-minute insertions are accepted as space allows. Phone 1-800-242-4519 (US); 1-800-468-1966 (Canada); FAX (785) 273-1980; email is akfeditor@zk.kscoxmail.com<

Deadline for each regular issue is the 10th of the preceding month.

Dedicated issues may have separate deadline dates and will be noted by the editor.

Articles printed do not necessarily reflect the opinions of the AKF staff or the American Association of Zoo Keepers, Inc. Publication does not indicate endorsement by the Association.

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E-Mail Addresses: You may reach Barbara Manspeaker at AAZK Administrative Offices at: aazkoffice@zk.kscoxmail.com< You may reach Susan Chan and *Animal Keepers' Forum* at: akfeditor@zk.kscoxmail.com<

AAZK Website Address: www.aazk.org

BFR Website: <http://bfr.aazk.org>

Scoops & Scuttlebutt



Chapters Support AAZK, Inc. Through Donations

The AAZK Board of Directors and the Administrative Office staff would like to thank the following Chapters that recently sent in donations in support of the Association's projects and programs: Chesapeake AAZK Chapter (Salisbury Zoo, Salisbury, MD) \$2500.00 [General Operating Fund]; Greater Kansas City AAZK Chapter (Kansas City, MO) \$250.00 [GOF]; Columbus Zoo AAZK Chapter (Powell, OH) \$1000.00 [GOF]; and the Little Rock AAZK Chapter (Little Rock, AR) \$500.00 [GOF].

We are also very pleased to report that the Cleveland Challenge #2 has been met by donations from AAZK Chapters received by the April 1st deadline. The Greater Cleveland AAZK Chapter is matching the first \$5000.00 in donations received at AO since its announcement of the new challenge. We sincerely appreciate the amazing generosity of the Cleveland Chapter members and their ongoing support of the Association's mission.

Great Website for Info on Zoo Keeper Training Schools

We would like to make you all aware of a great website that offers information on programs designed to train individuals to pursue zoo keeping as a profession. AAZK member Alex Mohr, Keeper III, Folsom Children's Zoo, Lincoln, NE, has put together an amazing amount of contact information on Zoo Keeper Education programs including High School Programs, Two-Year Programs, Four-Year Programs, Management Programs, Conservations Programs, Aquarium or Marine Mammal Focus Programs, and International Training Programs. We encourage you to check it out at <http://www.wonderferret.com/zoood/>. This may be a good resource for you when you get questions from interested individuals about where they can train to become a zoo keeper. According to Alex, this site is a "living document" which will be updated regularly. If you have information on a program not listed, you might want to forward it on to Alex for consideration for listing on the site. You may email Alex at zookeeperfcz@cox.net. We applaud Alex's work on providing this important information.

Coffee for the World Fundraising Proposal

All AAZK Chapters were recently sent a flyer on a proposal from Coffee for the World offering them the opportunity to utilize their products in fundraising to benefit AAZK's rhino conservation efforts. They focused their proposal specifically on the Sumatran Rhino and our efforts in the Bukit Barisan Selatan National Park in Sumatra, Indonesia. The coffee is packaged in stunningly attractive wildlife-themed bags. One of their bags is a Sumatran rhino-themed bag, Badak Kawa, and each bag tells the story of the Sumatran rhino and the efforts underway to save this species from extinction. A portion of the sale of every bag is donated to the International Rhino Foundation. Chapters have the option of purchasing bags of coffee outright or taking orders and then having them filled by the company for later delivery. Chapters may purchase bags for \$8.00 with a suggested resale of \$10, thereby providing \$2.00 per bag for AAZK's conservation efforts in Sumatra. If you would like more information or have questions, you are encouraged to contact Bret Raymond, Coffee for the World, 206 W. Shaw St., Tyler, TX 75701; info@CoffeeForTheWorld.com; (903) 360-0184. Visit their website at <http://www.CoffeeForTheWorld.com>.

Deadline Nears for 2004 AAZK Award Nominations

The AAZK Awards Committee is accepting nominations for the AAZK Jean M. Hromadka Excellence in Zoo Keeping Award, Meritorious Achievement Award, Lifetime Achievement Award, Certificate of Merit for Zoo Keeper Education, Certificate of Excellence in Exhibit Renovation, and the Environmental Enrichment Award which will be presented at the 2004 AAZK Conference in Dallas, TX. The deadline for nominations is **1 June 2004**. Information concerning qualifications, nomination procedure, selection procedure and an explanation of the awards may be obtained by contacting Janet McCoy, AAZK Awards Chair, Oregon Zoo, 4001 SW Canyon Rd., Portland, OR 97221. (*Editor's note: Information on these awards appeared in the January and February 2004 issues of AKF.*)

International Outreach and Marketing Positions Available

AAZK, Inc. is seeking a Steering Committee member for the International Congress on Zookeeping (ICZ). The successful applicant will represent AAZK, Inc. and its International Outreach Committee on the ICZ Steering Committee. Primary responsibilities include working on a diverse, international team of zoo professionals towards the continuing development of the ICZ, including planning and coordination of the Second International Congress of Zookeeping. The representative should attend ICZ steering committee meetings, which may include international travel. Qualifications include strong written and oral communication skills, computer proficiency, and a demonstrated ability to manage projects. Fundraising and conference planning experience is preferred.

The AAZK Marketing Committee is seeking a committee **Chairperson**. The chairperson will work with the Board oversight and committee members in coordinating the Association's marketing and development endeavors. The chairperson will provide written reports to the Board of Directors. The chairperson will facilitate meetings and workshops and present updates to the membership. Qualifications include strong written and oral communication skills, project management and problem solving skills. Experience in fundraising, marketing, or organizational development is desirable.

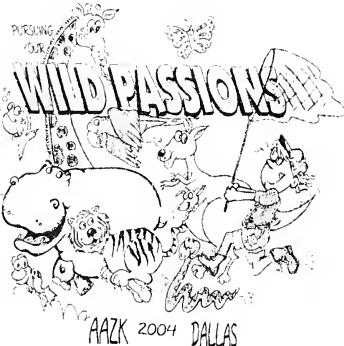
Job descriptions are available upon request. These are volunteer positions. To apply for either position, please send a cover letter, resumé, and two (2) letters of recommendation to:

Shane Good, Animal Keeper
Cleveland Metroparks Zoo
3900 Wildlife Way
Cleveland, OH 44109
sjg@clevelandmetroparks.com

Deadline for applications is **1 July, 2004.**

Dallas 2004 - "Pursuing Your Wild Passions"- September 26th - 30th

What is Chapter Challenge 2004? In order to keep delegates' cost to a minimum, while ensuring the best possible conference, we are encouraging Chapters to donate. If your Chapter contributes \$250.00 or more to support the 2004 National AAZK Conference, they will be entered into a drawing. The winning AAZK Chapter will receive one full registration and one double occupancy room for five nights at the Adam's Mark Hotel (Sept 26-30, 2004). Letters detailing all the information were sent to all AAZK Chapters in January. Start planning now to meet the challenge!!!



For everyone looking for the latest information on this year's conference, please visit our web site www.dallaszoo.com and click on 2004 AAZK conference. This will take you directly to our conference home page. Contact information is also provided if you have any additional questions. We look forward to seeing everyone in September!!!!

Deadline is June 1st for Research and CPR Grant Applications !

The American Association of Zoo Keepers announces the availability of two granting opportunities:

The Conservation, Preservation and Restoration (CPR) Grant – This \$1,000.00 grant is designed to encourage and support efforts in conservation conducted by keepers and aquarists in zoological parks and aquariums around the world. Members of AAZK, Inc. in good standing are eligible to apply and receive this grant. The member **MUST** have an active role in the conservation effort submitted for consideration. The division of this grant between two projects is at the discretion of the CPR committee. Funds are made available only after a progress report and receipts have been submitted.

The Zoo Keeper Grants in Research – Two \$1,000.00 grants are funded annually to encourage and support noninvasive research conducted by keepers in zoo and aquarium settings. The principal investigator **MUST** be a full-time keeper and a member of AAZK, Inc. in good standing.

Deadline for application submission for either grant option is **1 June 2004**. Successful grant recipients will be announced at the AAZK National Conference in Fall 2004. The grant cycle runs from 01 January 2005 to 31 December 2005. For further information or an application, see the AAZK Website at www.aazk.org, or contact Jan Reed-Smith, AAZK Grants Committees' Chair, jrsotter@iserv.net, 616-693-2680, Fax: 616-374-3263. Please specify which grant program you are interested in.

AAZK Announces Two New Grant Programs!

As part of our goal to promote AAZK member continuing education and experience, the AAZK Board of Directors and Grants Committee is pleased to announce the creation of two new grant programs. These are the AAZK/Geraldine Meyer Professional Travel Grant and the AAZK – AZA Keeper Course Grant.

The AAZK/Geraldine Meyer Professional Travel Grants are designed to assist AAZK members with costs associated with attending professional meetings or workshops, or participating in field research. The applicant must be an AAZK member in good standing and demonstrate 1) the value of participating in the workshop, meeting, or research and 2) how it will contribute to their professional goals and growth.

A total of \$2,000.00 is available annually. Grants are awarded twice a year, in May and November. Applications, from new and experienced keepers, are evaluated on their merit based on the member's submission of all requested materials. Awards may range from \$1,000.00 to \$250.00 or less depending on need. Applicants are encouraged to solicit additional funds from their institution or other sources. Applicants with other committed funds, or in-kind support (time off) will receive slight priority but all applications are encouraged.

Applications for **mid-year** consideration are **due by 1 February** of the calendar year; applications for **end of the year** consideration are **due by 1 July** of the calendar year. Money will be available upon notice to the recipient. Winners are required to submit an article to the *Forum* on the workshop or research in which they participated.

Fifty percent of the money available for this grant comes from AAZK and 50% from the Meyer-Reed Ecological Fund in memory of a woman who loved wildlife and believed in the work keepers and aquarists do.

The AAZK – AZA Keeper Course Grant awards \$1,000.00 to the winning applicant to attend the new Keeper Course offered by AZA through their professional school program. Applications are **due by 1 July** of the year prior to the one in which the applicant wishes to attend the Keeper Training course.

Until the required forms are placed on the AAZK website, they may be obtained by contacting the Grants Committee Chair at: jrsotter@iserv.net, jan.smith@columbuszoo.org or 616-902-2401.

Coming Events

AZA Eastern Conference - 12-15 May 2004. Hosted by the Louisville Zoo. For information contact Sandra Allen (502) 238-5608.

3rd Annual Callitrichid Behavior Husbandry and Management Workshop - 14-15 May 2004. Free with Preregistration. Conference site hosts: Lincoln Park Zoo and John G. Shedd Aquarium. For information contact Michelle Farmerie at (412) 365-2385. Email abrownie@wcs.org for a preregistration form.

AZA Otter SSP² "Otter Keeper Workshop" - 2-4 June 2004. To be held in conjunction with International Otter Colloquium (see next listing). The workshop registration fee is \$50.00 with enrollment limited to 20 participants. Lodging and meals are available at the university for roughly \$65.00 per day (includes three meals). For additional information contact jrsotter@iserv.net or go to the Knoxville Zoo website (www.knoxvillezoo.org) for a registration form.

IX International Otter Colloquium - 4-10, 2004 at Frostburg State University, Frostburg, MD. Theme is "Otters: Ambassadors for Aquatic Conservation". For more information go to <http://otter.frostburg.edu>

The Care and Management of Chimpanzee Workshop 18-20 June, 2004. Sponsored by the Chimpanzee SSP* at the Saint Louis Zoo, St. Louis, MO. Three-day course covering all aspects of progressive chimpanzee husbandry. Topics include managing complex social groups, operant conditioning training, social introductions, contraception strategies and enrichment programs. \$65.00 registration includes program materials/lunches. Space is limited. For info contact Steve Ross, Chimpanzee SSP Coordinator at ross@lpzoo.org or by calling (312) 742-7263

Joint Conference of the American Assoc. of Zoo Vets, the Wildlife Disease Assoc. and American Assoc. of Wildlife Vets - 27 August-3 Sept. 2004 in San Diego, CA. For additional info, contact Wilbur Armand, VMD, Executive Director/AZV at (610) 892-4812 or email AAZV@aol.com

2004 Gorilla Workshop - 25-28 June, 2004 in Calgary, Alberta, Canada. Hosted by the Calgary Zoo. Look for more details and registration information as they become available at their website - www.http://2004gorillaworkshop.tripod.com

Association of Avian Veterinarians 25th Annual Expo and Conference - 19-20 August 2004 in New Orleans, LA. Will include paper sessions, master classes, practical labs and workshops dealing with topics related to avian medicine and stewardship. Theme is "Birds and All That Jazz". For more info or to view the entire program visit www.conferenceoffice.com/aav or email aav@conferenceoffice.com, or phone (303) 756-8380

International Zoo Educators (IZE) Conference 2004 4-9 September 2004 at Ocean Park, Hong Kong. For more information visit - <http://www.izea.net>

2004 AZAD Conference - 8-12 September 2004. Hosted by the Philadelphia Zoo. For more info contact Bert DeVries or Mary Murphy at AZAD2004@AZADocents.org

25th Annual Elephant Managers Association Conference - 14-17 October, 2004 in Tulsa, OK. Hosted by Tulsa Zoo and Living Museum. Pre- and post-trips scheduled to Dickerson Park Zoo and Riddle's Elephant and Wildlife Sanctuary (18 Oct.). For more info email: karendunn@ci.tulsa.ok.us or visit www.elephant-managers.com and/or www.tulsazoo.org

International Marine Animal Trainers Association (IMATA) - October 17-22, 2004 in Kolmarden, Sweden. For more information: <http://www.imata.org> or email Kirstin Anderson at: imata2004@stofanet.dk

Carnivores 2004: Expanding Partnerships in Carnivore Conservation - 14-17 November, 2004. Presented by Defenders of Wildlife in Santa Fe, NM. Features three full days of sessions on terrestrial and marine carnivore issues, plus a poster session, field trip, silent auction, banquet and ambassador wolf sessions. Please visit website at www.carnivoreconference.org or leave a message at (202) 789-2844 ext. 315 for details. Abstracts for papers being accepted until 1 June 2004.

International Elephant Research Symposium - 3-5 December, 2004 in Fort Worth, TX. Presented by the International Elephant Foundation and the Fort Worth Zoo. This important symposium will concentrate on the research and conservation needs of captive and wild populations of elephants. We invite researchers from around the world to present conservation projects and research results on elephant management, health, nutrition, reproduction and behavior. Papers specifically addressing reproduction, calf management and elephant well-being are particularly encouraged. More details to come! Check the IEF and Fort Worth Zoo websites for more information and the call for papers at <http://www.elephantconservation.org> and <http://www.fortworthzoo.org> Abstract deadline: June 1, 2004. Interested persons can also contact Tarren Wagener at elephantsymposium@fortworthzoo.org for additional information.

6th International Aquarium Congress - 5-10 December 2004 in Monterey, CA. Hosted by the Monterey Bay Aquarium. Additional information in English, French and Japanese is available online at <http://www.iac2004.org>

The 7th International Conference on Environmental Enrichment - to be held in August 2005 in New York City, NY, USA. The conference is hosted by the Wildlife Conservation Society (WCS). Watch this page for details as they become available.

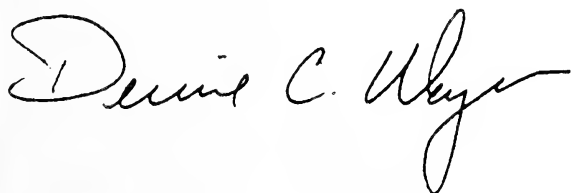
PLEASE NOTE: The International Serow Summit: 2nd Symposium on Capricornis and Its Related Species, originally scheduled by the Japan Serow Center for 2004, has been indefinitely postponed. Information will appear here when it becomes available.

Post Your Coming Event Here - email to: akfeditor@zk.kscoxmail.com

From the President

The inaugural offering of the AAZK/AZA Keeper Course entitled "Advances in Zoo Keeping in Zoos and Aquariums" has been taught in Houston, TX . Hopefully, those of you who took this course have recovered by now. It was an intense week of learning, but well worth it. There were a lot of "firsts" associated with this course. This was the first time this course was ever offered, the first time AZA ever held courses in a traveling training format, the first time some of you ever took an AZA course and, for some of us, the first time we've ever taught a course like this. But the most important "first" in my opinion is that this is the first collaborative effort between AAZK and AZA, and it truly was a joint effort. This course was designed and implemented by an equal number of AAZK and AZA members. I believe this speaks volumes about the quality of the people we have in this Association as well as the impact that we have on captive animal care. We have the expertise in this field and we are being recognized for that expertise.

How did we as an Association accomplish this? Quietly! We were never loud, never obnoxious, never in your face, but quietly we made noise in this field. We accomplished this by the quality of the work we do everyday, by the quality of the papers and posters we present at conferences, by the quality of the publications we write and publish through this Association, and through our efforts in worldwide conservation. But all the while we quietly went about the business of providing the best quality of animal care. Not too soft, not too loud, but just enough to draw a crowd which now recognizes our contributions and our dedication to animal care. So let us pat ourselves on the back, reflect on our accomplishments, but let's also keep on quietly making noise. Take care and be safe!



Denise C. Wagner
AAZK, Inc. President
The Phoenix Zoo, Phoenix, AZ



AAZK Announces New Members

New Professional Members

Eileen Salter, **no zoo listed (Phillipsburg, NJ)**;
Henry Bulluck, **Western North Carolina Nature Center (NC)**; Susan Inman, **Sea World Florida (FL)**; Richard L. Evers, **Lion Country Safari (FL)**; Kathleen M. Nowak, **Center for Great Apes (FL)**; Allison Touchstone, **Chattanooga Zoo (TN)**; Hubert Clay, **Jackson Zoological Park (MS)**; Rob Craig, **Great Cats of Indiana (IN)**; Alicia Boor, **Sedgwick County Zoo (KS)**; Bandy Hicks, **International Exotic Feline Sanctuary**; Shawn Bailey, **Utah's Hogle Zoo (UT)**; Deborah Outram, **Primate Foundation of Arizona (AZ)**; Alisha Brewer, **Reid Park Zoo (AZ)**; Carolyn Thickett, **Earth Rangers (Bolton, Ont., Canada)**; Michelle Rodgers, **Toronto Zoo (Toronto, Ont., Canada)**.

Renewing Contributing Members

Thomas C. Roy, Docent
Detroit Zoological Park, Royal Oak, MI

Lynn Peckham, Docent
Los Angeles Zoo, Los Angeles, CA

Shirley Busch, Volunteer
San Diego Zoo, San Diego, CA

Renewing Institutional Members

Out of Africa Wildlife Park
Fountain Hills, AZ

Oregon Zoo
Animal Management Library
Portland, OR

SPSNQ
Jardin Zoologique du Quebec
Charlesbourg, Quebec, Canada

Saskatoon Zoo
Saskatoon, Saskatchewan, Canada

Leather Elves Design Contest Deadline 31 May

Attention all AAZK members, it's time to put your thinking caps on. The AAZK Enrichment Committee and The Leather Elves are happy to be sponsoring the 2nd Annual Enrichment Device Design Contest. If you have an idea for a device that's just taking up space in your brain or if you have built something that has worked particularly well with your animals, share it with the world. Entries will be judged on safety, innovation and affordability. Keep in mind The Leather Elves do not weld and they do not use materials such as sheet metal. The winning device will be named after you, built by The Leather Elves and a portion of the proceeds for each sale will go to the AAZK. Please send in a written description and a diagram or drawing of your idea (don't worry - you do not need to be a professional artist!!) to:

Robin Shewokis/ The Leather Elves
43 Mutton Lane
Weymouth, MA 02189

Entries must be received by **31 May, 2004**. The winning design will be announced at the AAZK National Conference in Dallas, TX and in a subsequent issue of the *AKF*.



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FAX: (352) 495-9781

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Second Call for Papers

The theme for this year's conference is "Pursuing Your Wild Passions." We are looking for papers, posters, workshops or round tables that include inspirational or motivational aspects of the zoo keeping profession. Presentations involving all taxons are desired. Topics of interest include husbandry techniques, training, enrichment, education, exhibit design, conservation, research, and professional development.

Include the following information with each abstract:

- Name and title of presenter(s)
- Institution
- Address, including e-mail
- Title of paper, poster, workshop or roundtable
- Short bio of presenter (for introduction)
- Audio/Visual needs

**Deadline for Abstracts:
1 July 2004**

**Deadline for Papers:
26 August 2004**

Abstracts should be limited to one or two paragraphs. Abstracts must include in detail the significance of the topic to be presented along with the results, conclusions or benefits of the work described. The relevance of the presentation to the conference theme should also be included. Poorly written or incomplete abstracts will be returned!

Send abstracts by e-mail to jboylan@mail.ci.dallas.tx.us Or, submit two (2) copies of the abstract to: Jeanette T. Boylan, Dallas Zoo, 650 South R. L. Thornton Fwy., Dallas, TX 75203

Dallas 2004 Updates

Remember that the Chapter Challenge 2004 deadline is near! If your Chapter is considering a donation, please be sure that you send it in time to be entered in the drawing! The winning Chapter receives 1 free registration and hotel room for the week. All donations of \$250.00 or more are eligible.

Pre-conference trip details

We are excited to announce the plans for our trip departing early Saturday morning 9/25. We will travel south to Waco and the Cameron Park Zoo. After tours and a BBQ lunch we will depart for Fossil Rim Wildlife Center in Glen Rose. Participants will spend the night in their Safari Camp (sleeping bag required). All meals except dinner are included. Return to Dallas in time for the Icebreaker Sunday 9/26. Cost \$65.00

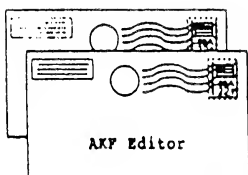
For registration or information contact Alex Vasquez Avsqz123@aol.com

Post-conference trip info

We are finalizing the post-conference options. The details will be available on our conference web site www.dallaszoo.com under AAZK 2004 Conf. The Caldwell Zoo in Tyler will be included in this trip. Tyler is in the east Texas piney woods.

We look forward to seeing everyone this fall !

Letter to the Editor



Dear AKF Editor,

Hello, my name is Heather Blythe. I know that you already answered questions on crisis management in the April issue of the *Forum*, but I would like to add some comments on it to help people be aware. First, I feel that crisis training/zoological safety is **very** important. Every zoo setting should have a crisis plan for any different situation that may happen (animal escape, fire, etc.), each person should know it to a tee, and also get training on it every so often.

The other main issue I would like to let people know is if any outside organization such as police, fire, search & rescue, etc. may be involved in any crisis situation, they need to be aware of "the plan" - what to do. For example, many years ago a keeper at our zoo left a gate open (not thinking) and a panther got out. The police were called and told vague details of the crisis situation. While the zoo staff was in the process of getting and loading the dart gun, a police officer panicked and shot and killed the panther. What a tragic ending. If only the officer had been aware of "the plan" and had an idea of what to do, the panther might still be here today.

Meet with outside organizations **before** you come across a crisis, several times a year to get "refresher" training so people are less likely to panic, can help the situation and not make it worse.

I hope people read this and learn from it because it's best to know safety - it should come first.

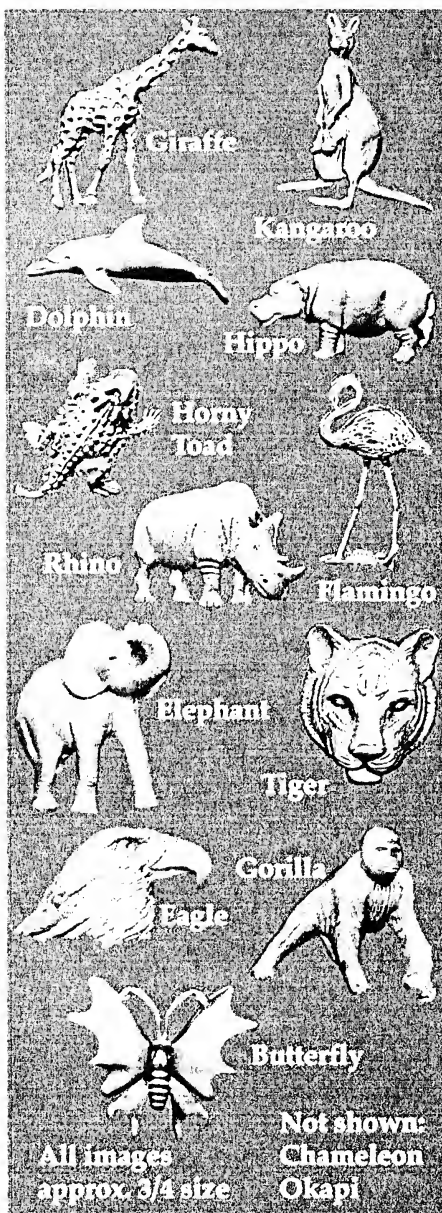
Thanks for your time.

Heather Blythe, Volunteer
Southern Nevada Zoological Park
Las Vegas, NV

Readers are welcome to comment upon material published in Animal Keepers' Forum through a Letter to the Editor. We welcome a free exchange of ideas benefiting the zoo keeping profession.

A Pewter Pin Makes a Great Gift

And the Proceeds Support the 2004
National AAZK Conference.



Pins are \$12.00 each (S & H included). To order: List the pins and the number of each you want along with your name and complete mailing address. Make checks payable to Dallas Zoo Keepers Association. Mail your order to: AAZK Pins, c/o Dallas Zoo, 650 South R.L. Thornton Frwy., Dallas, TX 75203.

ABC's

ABC's: Animal Behavior Concerns and Solutions

A Question & Answer Forum for Animal Professionals

©2004 by Diana Guerrero, Independent Behavior Consultant
Ark Animals of California, Big Bear Lake, CA



Zebra Evaluation (*Equus grevyi*)

Part Two of Two

Question

We have been experiencing some trouble with our male Grevy's zebra (*Equus grevyi*) and could use some guidance. What do you suggest?

Answer

Last month this column included: background, discussion, the presenting problem, and an assessment of this zebra. This month concludes with specific suggestions.

Diligence, consistency (not predictability), and variable schedules are mandatory to get this zebra's inappropriate behavior redirected. I recommend you consider the following:

Assess the diet and feeding routine.

This animal quivers in his skin and is very high strung which can be an indicator that your animal is sensitive to fillers and/or high protein levels. Sensitivities can sometimes adversely affect the behavior of individuals. Have your veterinarian or a nutritionist evaluate the diet and check your pelleted food analysis.

Alternative therapies.

Consider using some alternative therapies to see if they make a difference. There are non-ingested remedies that work on an energetic level, and homeopathic treatments that are proving successful in the domestic animal realm. I have some regional references, but Dr. Madalyn Ward in Austin, TX is a homeopathic equine veterinarian. Ask your staff veterinarian to call Dr. Ward to explore the possibilities or to call me for other references.

Give this animal more to do mentally and physically.

High energy and intellect require increased mental and physical activity. For mental stimulation, outline and increase your training sessions—and try again with the enrichment. I would train this animal to move. A to B's can simulate lunging and get him to move. You can use tones or buzzers so that eventually it will require only one trainer to operate the system to get the activity.

Enrichment.

Make sure to break up your feeding stations and routine. If you can, introduce a timed feeder that can be reprogrammed easily for a variable schedule. A rubbing mound, feeders

that require problem solving to obtain the contents, a suspended battering toy, olfactory stimulants, and audio distractions (you might try talk radio in the barn) are some tools to consider. Introduce different textures and scents to the rubbing mound. Since this animal seems to be good with deciphering latches, find or design novel puzzle challenges for him. Consider also redirecting him to grabbing something appropriate that he can then toss around.

Outline a training program.

Outline your goals and the criteria of behavior prior to starting your program. Each staff member should have tangible monitors of the criteria. Here are some quick tips:

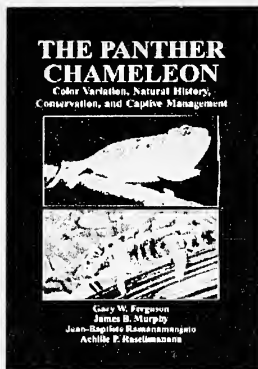
- Shorter more frequent sessions are better than those of long duration.
- It is the quality of the session, not the longevity, that is important.
- Be sure to use random schedules as he will respond adversely to predictable schedules.
- Be variable in the time of your sessions, your rewards, in your time-out durations, and in your termination schedule (longevity) of the sessions.
- Make sure your keepers terminate the session if the animal moves out of the training area.
- Only reward calm behavior. It is critical to set your level of criteria on this and ASK for it. Teach a key word and then reward the response. If the animal is slamming the fence and snorting or breathing heavy, ask for calmness, when you get it then reward with a scratch. If you do not, withdraw. Then try again. Sometimes you will need to withdraw a short distance with your back to the animal, other times you will need to move away further for a longer duration. Keep this variable as he will challenge you.
- When working in proximity to the animal, acknowledge the animal when he is calm and verbally praise him while he remains calm. Keepers should not be distracted when in close proximity to this animal. Move away if conversation or distractions occur.
- Implement a dual target training strategy. One trainer works two targets. This technique teaches him to respond to a body target at a different body part than the main target.
- Construct a scratching stick. Since this animal is highly tactilely oriented, use a brush tool to reward him.
- Keep all appendages away from and out of the fencing. Use the scratch stick for tactile rewards.
- If rewarding with food, only offer from the palm (held up like a stop signal) and keep the hand away from the fence.

Start your fundraising for the new exhibit.

Part of your difficulty is that this animal needs more room and stimuli. Construction and design of your new exhibit should be encouraged.

If you map out your strategies and work together with these recommendations you should see some immediate changes.

About the columnist: Since 1978 Diana L. Guerrero has worked professionally with both wild and domestic animals. Guerrero has been affiliated with and certified by a variety of animal programs in the USA and Europe. Based in California, she writes, consults, and leads safaris. Information on her animal career programs, training courses, and her newest book, *What Animals Can Teach Us about Spirituality* (SkyLight Paths, 2003) are available through her website. Questions for ABC's should be submitted to Diana directly through the ABC's questionnaire on her website, via email zooit@arkanimals.com, or through regular mail: c/o ARKANIMALS.COM, PO Box 1989-215, Big Bear Lake, CA 92315 USA.

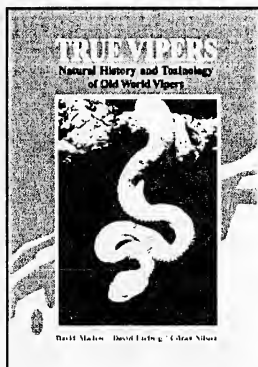
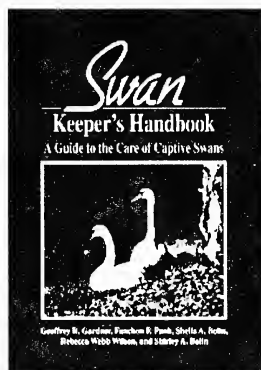


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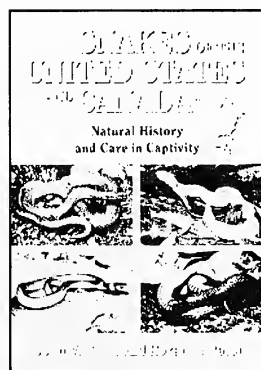


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Kenya Plans Massive Elephant Relocation

Kenya plans to move 400 elephants away from a reserve where they have been breaking down fences and trampling crops. This relocation represents the biggest animal relocation effort of its kind in Kenya's history.

Rangers in helicopters will use tranquilizer darts to immobilize the elephants before they are loaded into crates for a cross country trip which will translocate them from the overcrowded Shimba Hills National Reserve on the coast to the Tsavo East National Park in southern Kenya.

Edward Indakwa, Kenya Wildlife Service (KWS) communication officer said that the move will lessen the pressure on the Shimba Hills habitat which currently has 600 elephants in residence. There will also be less conflict with local communities and farmers who have lost crops to the overpopulated herds. The relocation effort will also allow for regeneration of the Shimba Hills ecosystem.

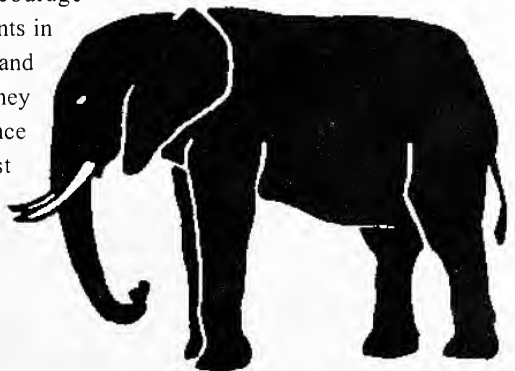
"This is in line with KWS Elephant Population Management Strategy to resolve conflicts, restore biodiversity, re-stock depleted ranges and promote tourism," Indakwa added. "KWS scientists were already carrying out studies of elephant family units in the Shimba Hills to select the ideal family groups for translocation."

He added that the authorities would ensure that both at donor and recipient sites precautions were taken to ensure the elephants do not stray into human settlements after their release.

The move is scheduled to begin in July and will be accomplished over a two-month period. It is a very expensive operation, costing about \$6400 US to move each animal the 93 miles to the Tsavo Park.

The translocated pachyderms will help repopulate Tsavo East, where ivory poaching has decimated the elephant population from approximately 40,000 animals in the 1960s to about 5,000-7,000 today

The Kenyan Wildlife Service hopes to discourage elephants from trampling over human settlements in search of water by fencing a portion of the park and constructing artificial drinking water pans. They will also construct holding bomas and enhance security patrol units in northern Tsavo East National Park.



Source: Compiled with information from News Features XTRA/MSN/Reuters 3/30/04 and Terra Daily 3/24/04



REACTIONS

A Question and Answer Forum for the Zoo Professional on Crisis Management

*By William K. Baker, Jr., Curator
Little Rock Zoo, Little Rock, AR*

Question

How important is morale to the overall safety of a zoo?

Comments

Every so often a question is posed that seems a little on the abstract side. Yet, I know in my heart that it is relevant to our field and our day-to-day lives as animal professionals. So often I hear about the morale somewhere else and how the staff is dealing with it. I don't pretend to have all of the answers, but I usually try to be supportive and help where I can. So having said that, I'll try to do it here in print.

Like a good book, this has to have a beginning and establish a frame of reference. Professionally and personally, I believe that morale has multiple components: communication, attitude, and perception. In my experience, most morale-related problems can be attributed to communication. However, the other two components always seem to play a part in the process as well.

Communication, in theory, should be a two-way street between management and the staff and when it isn't this is when the problems start. This is usually the precipitating factor for the "us against them" or "management vs. the keepers" attitude that I have heard over the years. In some cases one or both sides aren't communicating and in other cases the people aren't listening. By that last statement, I mean simply having meetings and a forum does not necessarily imply that a constructive dialogue is taking place among people.

The result is the misconception that communication is occurring, when in fact it isn't. This is when the other two issues of attitude and perception slip in. The perception that follows is that no one is listening, which may or may not be true depending on the circumstances. This tends to lead to talk, rumors, and heated discussions in the ranks, which leads to a change in attitude. Hence, bad morale. Talented managers pick up on this and alter their communications approach and the less talented miss the point entirely.

Over time, the situation can continue to degrade and become unpleasant at the minimum. The long-term aspects of this will often include alienation, bitterness, disillusionment, and eventually job burn-out. Unfortunately, all too often this will result in a turnover in staff as they head for another facility. This is a mistake that impacts everyone. Staff members are searching for the perfect facility, when it doesn't exist and management is looking at attracting staff, training them, and hopefully retaining them - all of which can become a vicious cycle that can haunt a facility for years.

So, having said all of this and with the realization that every situation is uniquely different, what can be done about all of this? First and foremost there has to be a catalyst to break the cycle. Usually, it starts with one person who is willing to go out on a limb and try to establish a dialogue, or an event occurs that is so negative or problematic that it forces a resolution. What I would rather focus on is the prevention of this type of problem in the first place. While devising some type of structure or format to follow would be advantageous, I don't believe that is truly possible for this. More likely, some general guidelines would be applicable here. Think of them as axioms or some pretty good rules to live by.

- Listen. I mean really listen to the people around you. Most individuals want at times simply to be heard out and have the means to do so. One of the hardest lessons I have learned in my life is the delicate art of listening. No judgments, comments, or suggestions, just listen and hear not only what's being said, but how it is being said as well.
- Respect. We are all dedicated to the cause of conservation and as such are peers. Regardless of their position in a facility, mutual respect is critical to long-term success.
- Resources. Learn to realize that everyone has their strengths and weaknesses, yet each person is still able to bring something to the table. Also, each person in turn should be given the opportunity to gravitate towards their professional strength and achieve their goals. That's the essential basis of team-building.
- Timeliness. Once a problem has been identified, discussion should take place, but at some point the problem should be addressed and resolved, period.
- Discipline. Be fair and consistent and temper your decisions with compassion and respect. Never belittle another professional during this process.
- Priorities. Everyone should be on the same page when it comes to information, projects, and the associated goals. Miscommunication should be immediately addressed.
- Mistakes. Everyone makes them, no one is perfect (myself included), apologize, regroup, and move on.

In closing, I would say that good morale is essential to the overall safety of any zoological facility or institution.

Next Month: What are your thoughts on the growing reports of problems with exotic animals in private hands?

If you would like to submit a question for this column or have comments on previously published materials, please send them to AAZK, Inc., 3601 S.W. 29th St., Suite 133, Topeka, KS 66614 Attn: Reactions/AKF

(About the Author: Since 1985 Bill has been active in the fields of science, zoology, and wildlife management. His education and experience include a B.S. in wildlife management and post-graduate studies in zoology, Lab and Museum Assistant, Shoot Team Leader, ERT Member, Large Mammal Keeper, Senior Keeper, and Zoo Curator at various zoological facilities. His area of research is crisis management in zoological institutions, which draws upon practical experience and training as a Rescue Diver, Hunter Safety Instructor; NRA Firearms Instructor; and Red Cross CPR/First Aid Instructor.)

Investigating Hormonal Correlates of Seasonal Stereotypic Swimming in a Male Alaska Brown Bear (*Ursus arctos*)

(Final report from research conducted with an AAZK Keeper Grant in Research)

By

Christy Mazrimas-Ott, Senior Keeper
Mammal Department, Brookfield Zoo
Brookfield, IL 60513

Introduction

Natural behavior in many wild animals involves separation and dispersal of young from mother and siblings upon weaning. Brown bears (*Ursus arctos*) are no exception. Brown bear cubs typically den with mom for two additional winters from birth. Upon separation cubs will remain together for an additional year (Brown, G 1993). D.Brown (1985) notes "siblings may remain together for up to four years even without their mothers." Brown bears reach sexual maturity at 4-5 years of age, but males will continue growing until 8-10 years of age and will not be successful breeders until then due to competition with older and stronger male bears (Brown, G 1993).

Brookfield Zoo is currently housing two male sibling Alaska brown bears (*Ursus arctos*) that were orphaned on Admiralty Island in 1995. In May of 1998 the keepers noted a stereotypic swimming pattern developing in the smaller male, Axhi, but not his brother, Jim. Jim is physically larger and would routinely win during aggressive and playful interactions. These two males will share enclosure space indefinitely and when possible they are given access to two grottos rather than one, or are given access to novel grottos.

In an effort to track the time course of this behavior, and attempt to identify possible causes, we have collected behavioral data for the past five years on Axhi to help determine if the stereotypic swimming is seasonal. In 2000 we were able to begin hormone analysis in order to assess any relationship between hormones and seasonal behavior.

Analysis of fecal hormone metabolites can provide a non-invasive assessment establishing normative endocrine data (Lasley and Kirkpatrick, 1997; Schwarzenberger et al., 1996; Brown and Wildt, 1997). Longitudinal fecal steroid metabolite monitoring under natural photo-period permits us to evaluate reproductive seasonality (Brown et al., 1996). Fecal testosterone metabolites have been analyzed to study seasonality and dominance, for example, in musk oxen (Flood et al., 1992) and other species. Since Axhi's behavior has been observed to occur seasonally we wanted to test whether stereotypic swimming could be associated with either changes in testosterone concentrations in Jim or Axhi, or higher glucocorticoid concentrations in Axhi.

Measurement of glucocorticoid levels in the bloodstream has long been used as an index of stress for many species (Moberg, et al., 1987). The use of recently developed glucocorticoid monitoring in combination with quantitative assessment of behaviors and monitoring of reproduction hormones show great promise in helping us to understand the complex relationships between "stress" and stereotypic behavior and other physiological and environmental variables. Stereotypic behavior has frequently been described to increase under apparently stressful circumstances (Meyer-Holzappel, 1968; Mason, 1993). However, little is known about the physiological response associated with observed stereotypies (Carlstead and Shepherdson, 2000). By monitoring fecal glucocorticoid

concentrations we can obtain a measure of the physiological response in combination with behavioral observations.

Materials and Methods

Brookfield Zoo's two eight-year-old male sibling Alaska brown bears, Axhi and Jim, were used for the study. They are housed in concrete and gunnite exhibits, with a dry moat. Each grotto has a pool at least five feet deep. The pool in grotto IV is 30' by 12' (9.1m by 3.7m), 6' deep (1.8m) and positioned on the west side of the grotto. The dry resting area is 2,142 square feet (199 sq. meters). There is a substrate pit along the east wall and a series of elevated ledges along the back wall of the grotto. There are two long dens, as well as, short transfer dens on both sides of the exhibit. The east short transfer den leads to grotto V with a pool 7' by 5' (2.1m by 1.5m), 5' deep (1.5m) on the east side of the exhibit. The dry resting area is 1,152 square feet (107 sq. meters). There are elevated ledges along the back wall and the east side of the grotto along the pool, and only one long den. Axhi and Jim have access to both these grottos now, but have been housed in one grotto together when necessary.

The siblings are fed twice a day by scattering their diet all over the exhibit to encourage foraging. Their diet includes fish, meat, carrot, apple, lettuce, bread, and dog chow. Enrichment is also a big part of their day. Novelty food items, browse, rawhides, woodwool, and various different toys are rotated and given on a daily basis. Axhi tends to try new items first, but Jim has a tendency to be overpowering and to monopolize them.

Behavioral observations have been conducted on Axhi since 1998 when the stereotypic swimming first occurred. Initially, we did intensive observations during a five-week period that summer and provided various enrichment devices. Observations were done three times a day scanning every five minutes for one hour. After seeing no change in Axhi's behavior, we modified our observation protocol and continued observations year-round. Using instantaneous sampling (Altmann, 1974), keepers record Axhi's behavior, his proximity to Jim, the weather, the crowd level at 30-60 minute intervals within an eight-hour day. Behavior is classified into one of the following categories: stereotypic swimming, in the water no stereotypic swimming, resting, locomotion, feeding, being social or any contact with Jim. Figure 1 shows the behavioral observation sheet that was used for this study. Keepers conducted the observations weekly year round and up to three times a week when the stereotypic swimming occurred. Data entry and analysis of the behavioral observations were completed with assistance from the behavioral research staff.

Starting in March of 2000 keepers collected fecal samples from both bears 2-3 times a week for two full years for hormone analysis. Fecal samples were stored frozen at -20°C (-4°F) until analysis. Samples were collected between 9:00am-12:00pm. Green food coloring and canned corn was used to distinguish the feces of both bears. Enzyme immunoassay analysis (EIA) was used to measure fecal testosterone and corticoid concentrations.

Both, a biochemical and a physiological validation were preformed to validate these assays for measuring fecal steroid metabolites in Alaska brown bears. The biochemical validation included extraction efficiency, parallelism, and accuracy. The physiological validation established the biological relevance of our assays. For the testosterone assay validation fecal samples were collected three times a week for 16 weeks from both an adult female brown bear at Washington Park Zoo in Michigan City, IN and two sub-adult male brown bears at Grouse Mountain Refuge for Endangered Wildlife in North Vancouver, BC. For the corticoid assay an ACTH (adreno-corticotrophic hormone) challenge was conducted on both our male bears. Samples were collected seven days prior and seven days past the challenge. All hormone analysis was carried out at Brookfield Zoo's newly established endocrine lab by their staff.

Results and Discussion

Behavioral data suggest that the stereotypic swimming pattern is clearly seasonal during the past five years for Axhi (Figure 2). The significant effect of temperature and crowd level on occurrence of the stereotypic swimming is a likely correlation, rather than a casual association, due to the seasonal component (and the relationship between crowd and temperature). The behavioral data also shows that when Axhi exhibits stereotypic swimming he also spends more time in "locomotion" and in "water", rather than "resting" and "out of view".

Figure 3 represents the physiological validation of the testosterone assay. It shows that the testosterone concentrations of female and juvenile male brown bears are much lower than those of an adult male brown bear. Axhi and Jim were each subjected to ACTH challenges to physiologically validate the corticoid assay. Both bears showed a remarkable corticosterone peak on the day after the ACTH challenge (30 May 2002 on Figure 4 for Axhi).

Figure 5 compares behavior, testosterone, and corticoids for Axhi for 2000-2002. In 2000 elevations in both hormones are apparent beginning before the onset of his stereotypic swimming (note that sampling began in week 11 of the year, but Axhi's stereotypic swimming began in week 16). Unlike his brother Jim (not illustrated here) whose hormones returned to baseline by week 25 in 2000, Axhi continued to show some elevations through the end of the year, though a noticeable plateau is evident at the time at which the stereotypic swimming ends. 2001 shows both hormones increasing in Axhi at the time stereotypic swimming begins, and they remain fairly high until about week 95. A strong increase beginning around week 92-93 probably coincides with the arrival of a new juvenile male polar bear at the bear grottos. In 2002, hormones and stereotypic swimming show similar patterns. However, the testosterone pattern appears to be driven largely by a single really high point (with corticoids remaining stable) with a peak around week 109 (corresponding to ACTH challenge in May). Axhi's stereotypic swimming was associated with his corticosterone levels in 2001 (spearman's $r=0.643$, $p<0.002$, $n=20$). The observed patterns were also related to some extent to hormonal changes in his brother, Jim. In 2001, Axhi's stereotypic swimming increased with increases in Jim's testosterone (spearman's $r=0.486$, $p<0.03$, $n=20$). A similar relationship was evident in 2000, with Axhi's swimming associated with increases in Jim's testosterone ($r=0.714$, $p<0.003$, $n=15$) and corticosterone ($r=0.562$, $p<0.029$, $n=15$).

Axhi's stereotypic swimming behavior began when he was three years of age which is the appropriate age for dispersal to happen for juvenile brown bears in the wild. Axhi continues to be housed with his brother, Jim, who would have also dispersed and gone off on his own if the brothers were in a natural social situation. This supports the idea that the stereotypic swimming by Axhi is a consequence of normal seasonal and developmental patterns versus an abnormal, aberrant behavior. The differences between Axhi and Jim and their changes over time, may reflect developmental and individual differences. Jim is still the dominant bear based on casual observations of interaction over food, novel objects, etc., even though Axhi's testosterone now appears to be higher than Jim's. Perhaps the behavioral /dominance patterns established when they were young are stable enough that they do not change even in the face of differences in seasonal and developmental maturation.

Acknowledgements

The author would like to thank all the staff at Brookfield Zoo for their help with the project, especially Sue Margulis, Nadja Wielebnowski, Astrid Bellem, and Laurence Gesquiere. Special thanks to the staff at Washington Park Zoo in Michigan City, IN, for collecting fecals on Calamity Jane, and to the staff at Grouse Mountain Refuge for Endangered Wildlife in North Vancouver, BC, for collecting fecals on Boo and Grinder

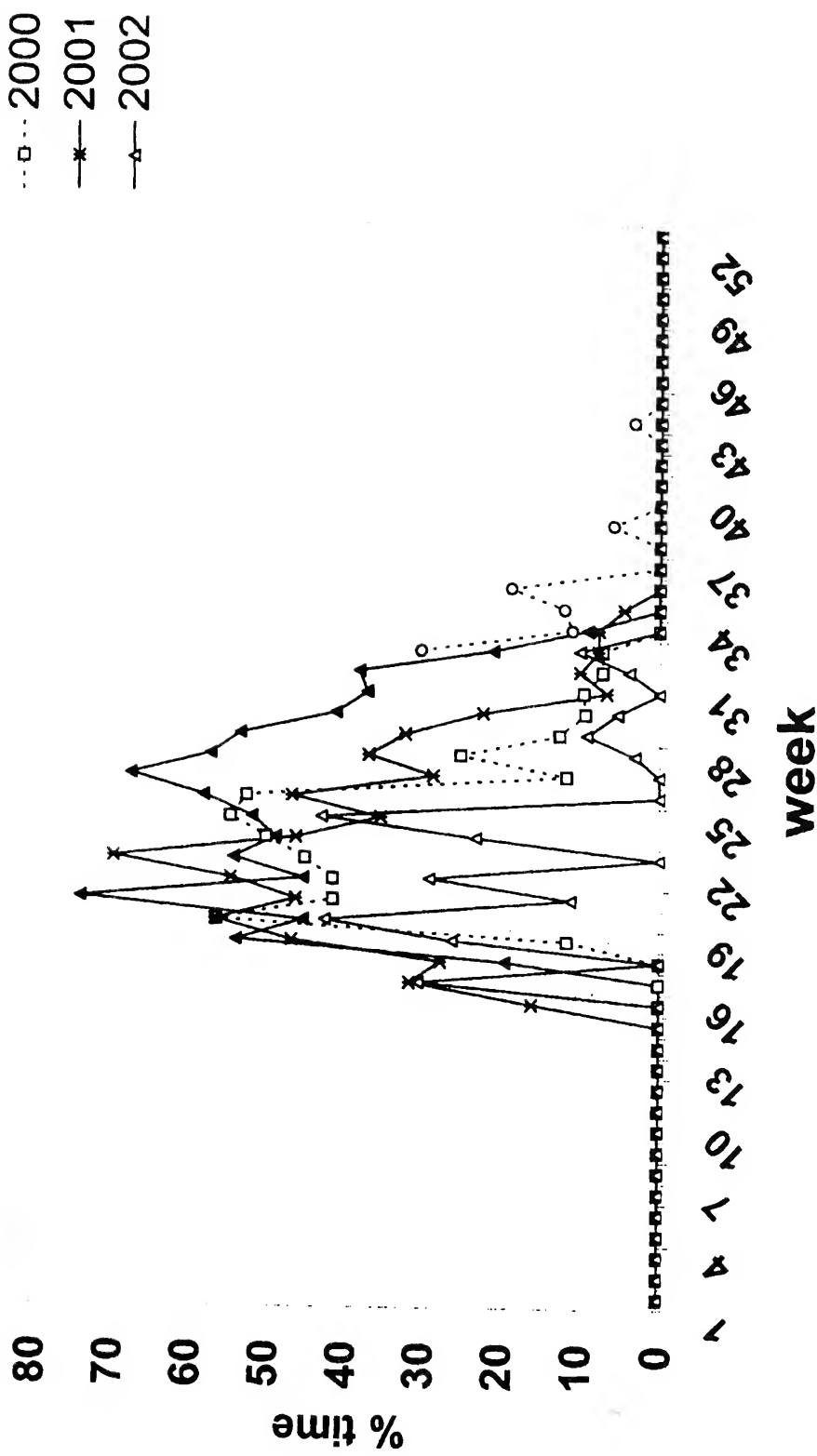
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BEAR SCANS – FOLLOW-UP

Date _____ Weather _____ Enrichment _____
(for proximity, C=contact to 1 body length; 5=up to 5 m; >5=>5 meters, same grotto;
D=different grotto)

Figure 2 Axhi's % time stereotypic swimming



Bear Testosterone Adult, Juvenile and Female

Figure 3

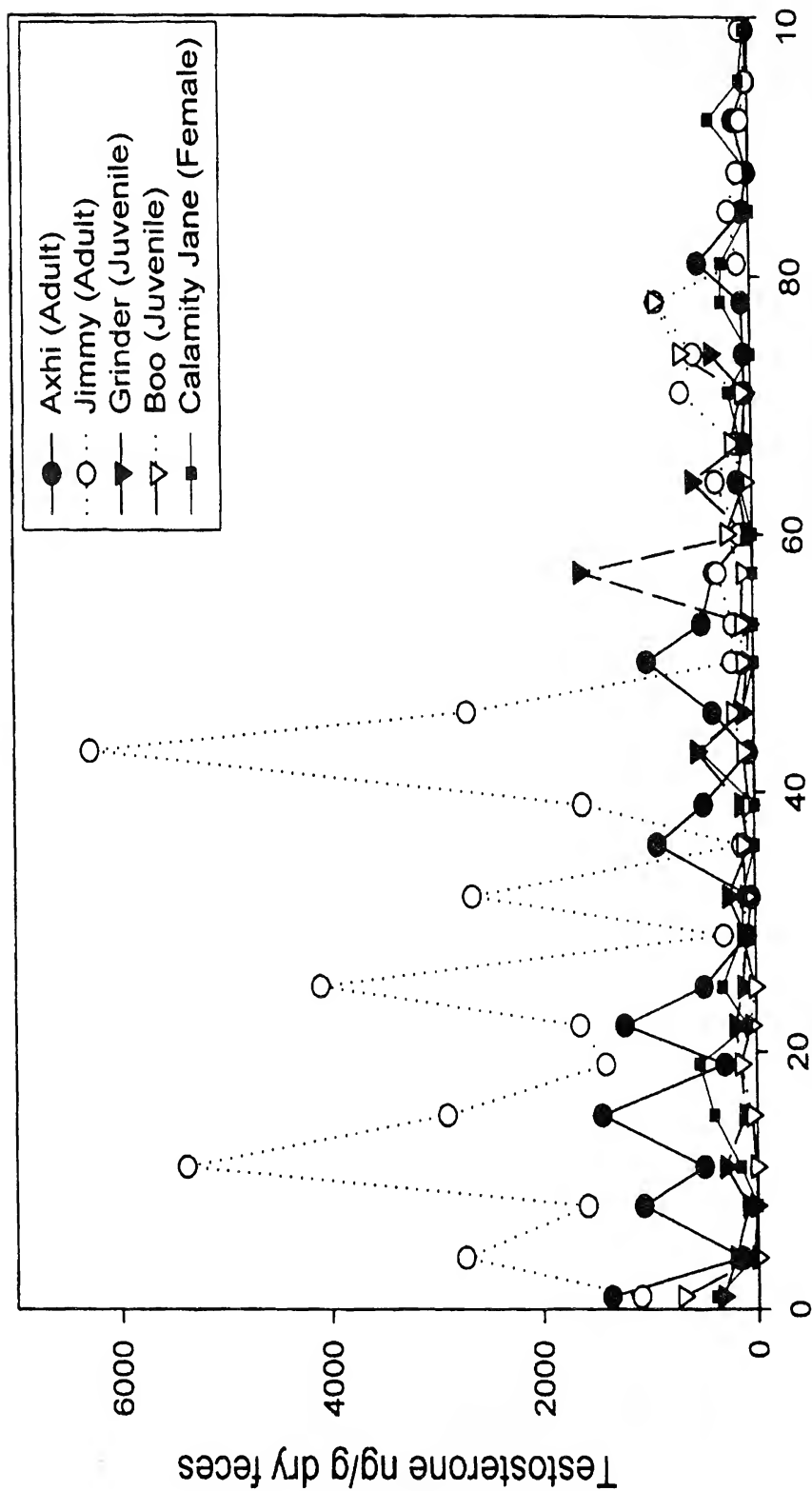


Figure 4 Axhi's ACTH Challenge

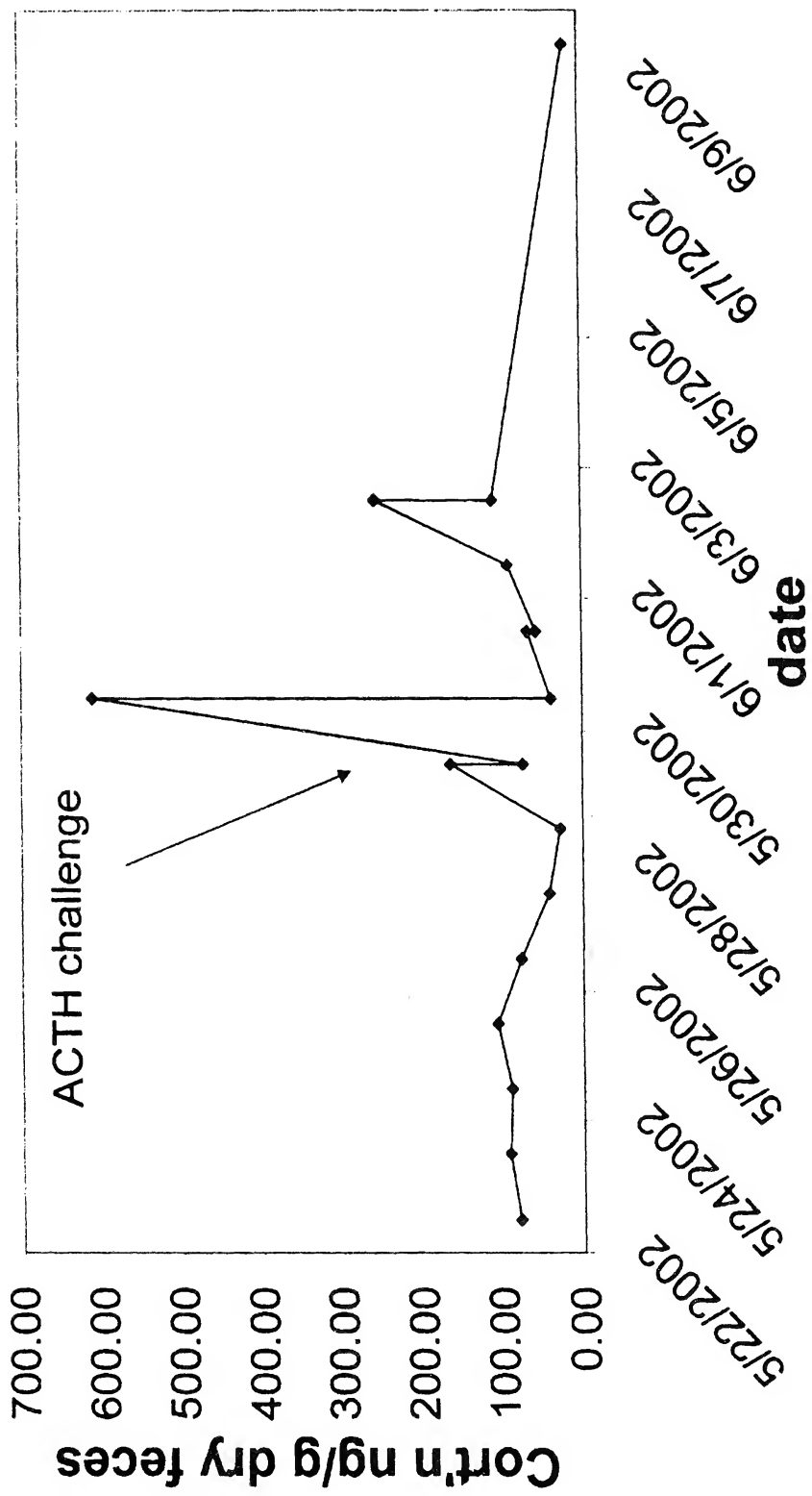
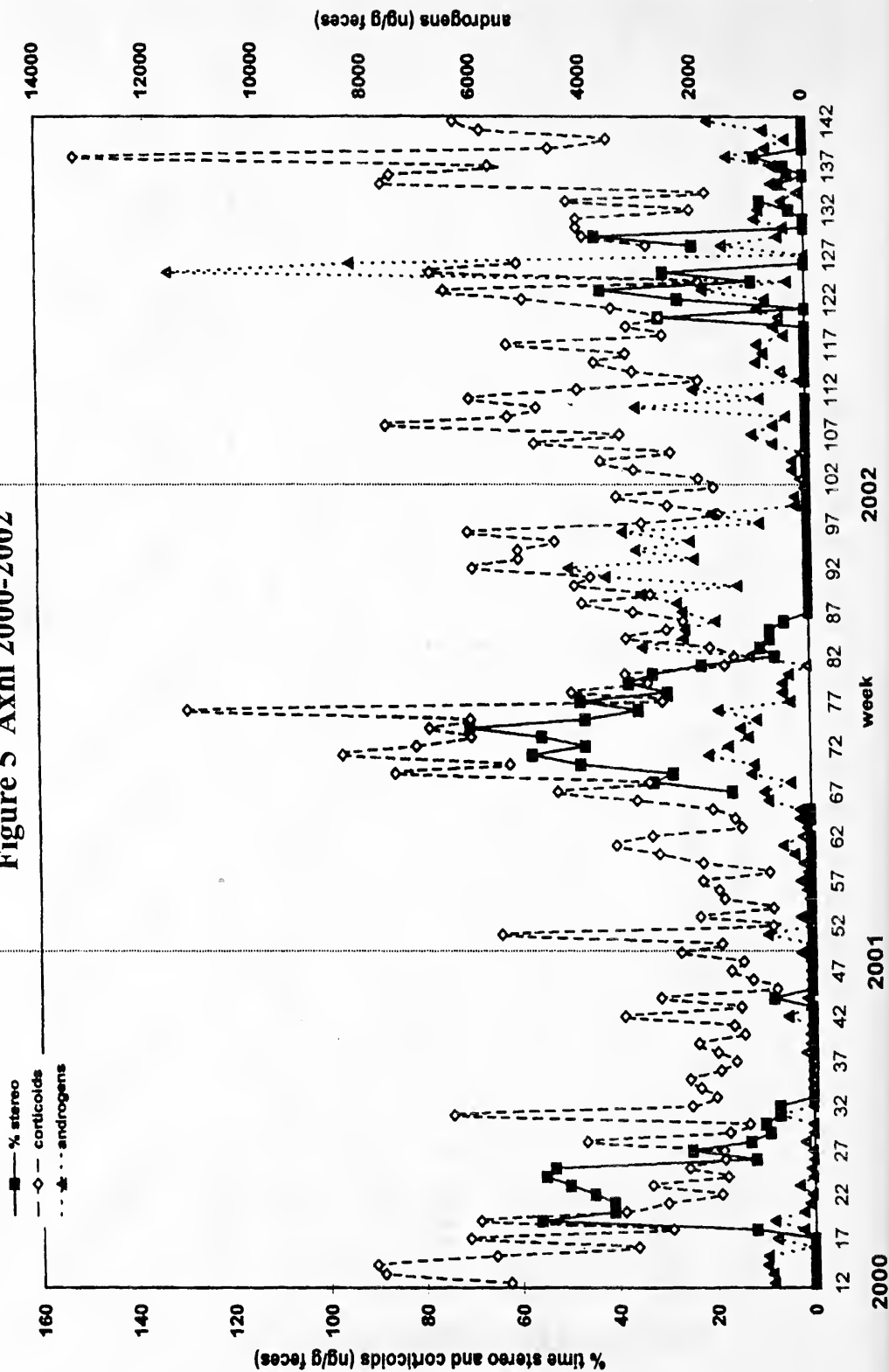


Figure 5 Axhi 2000-2002



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Papers included: To Russia with Love: A Synopsis of the Tenth Year of the Russian Crane Project with a Look to the Future ~ Guam Rail Reintroduction Project ~ Protocol Importance in the Husbandry of Gabriella's Crested Gibbons ~ AAZK Cooperative Partnerships: Working with Local and Regional Organizations on Conservation Projects ~ Raising Asia...Successfully Raising a Sloth Bear Cub ~ Experiences with Caribbean flamingo *Phoenicopter ruber ruber* Chick Hand-rearing at the Birmingham Zoo ~ Cost-free Fundraising Through Printer Cartridge Recycling - Building Your Donor Network ~ Phoenix Rising: Tidbinbilla Nature Reserve ~ Recall and Crate Training in a Free-flight Aviary ~ Tracking Orangutan Ovulation Cycles Through Cytology ~ The Living Desert's Cheetah Ambassador Program ~ ABCs from A to Z: Animals, Business, and Conservation in Aquariums and Zoos ~ Managing the Socialization of a Speke's Gazelle at the Saint Louis Zoo ~ Perceptions and Data: The Effect of Estrus Cycles on a Non-reproductive Chimpanzee Group ~ The Evolution of the Night Keeper at Disney's Animal Kingdom ~ The Lake Malawi Aquarium and Quarantine System at Lincoln Park Zoo's Regenstein African Journey ~ Auditory and Olfactory Enrichment Trials in the Cougar *Felis concolor* ~ Project Golden Frog/Proyecto Rana Dorada ~ A Dog-gone Wild Time at the Minnesota Zoo ~ Behavior Management + AAZK + Zoo Members = Fun & \$ for Conservation at the Minnesota Zoo ~ "Are you looking for that furry black thing?" A Mixed Species Exhibit Featuring Malayan Tapirs and Binturongs Makes for Some Strange Situations and a Wild Occupation for Zoo Keepers at the Minnesota Zoo ~ Developments in Breeding and Managing Cockatoos ~ Disney's Animal Kingdom Veterinary Services Wildlife Program ~ Transformation from Menageries to New Millennium Conservation Centre ~ The Survivorship of Captive-bred, Released Louisiana Pine Snakes ~Tapping Teenage Talent ~ The Addition of a New Lemur Species into an Existing Multi-species Lemur Exhibit at the Hattiesburg Zoo ~ Developing a Multi-functional Callitrichid Nest Box to Combine with Operant Conditioning to Increase Animal Husbandry and Decrease the Potential for Stress when Chemical Restraint is Necessary ~ Environmental Enrichment: Achieving Zoo-wide Animal Enrichment Days Through Successive Approximation and Positive Reinforcement ~ The Role of Woodland Park Zookeepers in a Ferruginous Hawk Satellite Telemetry Project ~ A Zookeeper's Role in Exhibit Design ~ Striving for Successful Births in a Young Pair of Golden Lion Tamarins (*Leontopithecus rosalia*) ~ For Conservation's Sake: The Clouded Leopard Project ~ Translocation of Blue and Gold Macaw (*Ara ararauna*) into its Historical Range on Trinidad ~ *Homo sapiens* ~ The Hardest Animals to Train ~ "Running a Successful Internship Program at Your Facility" ~ Chiropractic Care in Animals - "An Alternative Approach to Geriatric Care" ~ Wildlife Management in Metropolitan Cleveland: Taking Conservation Beyond the Zoo ~ The Best Zoos in the 21st Century ~ Surplus Animals: Stewardship on the Ark ~ So Many Cats, So Little Time ~ The Enrichment Challenge ~ Changing Exotic Animal Ownership Regulations ~ When Plan A Becomes Plan Z: The Challenges of Shifting a Resistant Pair of Black Rhinoceros (*Diceros bicornis*) to a New Exhibit Through Positive Reinforcement and PATIENCE ~ Welcome to the Information Age: How to Find, Evaluate, and Use the Information You Need ~ Making a Difference with Bowling for Rhinos. **Poster Abstracts:** A Multivariate GIS Model to Determine Black Bear (*Ursus americanus*) Habitat Suitability in Eastern Ohio ~ Alternatives to Parent-rearing in Pteropus Species at the Lube Foundation ~ Conditioning Male Rockhopper Penguins (*Eudyptes chryocome*) to Accept Voluntary Semen Collection ~Penguins and Fish Can Co-exist ~ Improved Rearing of Red-bellied Piranha (*Pygocentrus nattereri*) in an Endotherm-dominated Institution ~ Project Golden Frog ~ Cleveland Metroparks Zoo; Building a Breeding Herd ~ Enrichment: From Animals to Audience ~ Who Says You Can't Teach an Old Ram New Tricks? ~ Survival of the Fishing Cats: Successes and Failures in Fishing Cat Reproduction at the San Francisco Zoo ~ Developing Improved and Safer Control Measures for Helminth Parasites of Bears in Zoological Parks ~ The Enrichment Tree. **Workshops/Panel Discussions/RAP Sessions Summaries:** AAZK, Zoo Animal Staff, and Research - Why it's a good idea and how to get involved ~ Advances in Animal Keeping in Zoos and Aquariums ~ A new AAZK-AZA Professional Keeper Training Program ~ Amphibian Workshop ~ Animal Welfare, Enrichment, and the AZA: What do they mean to keepers? ~ Australasian RAP Session ~ Primate Workshop and More!

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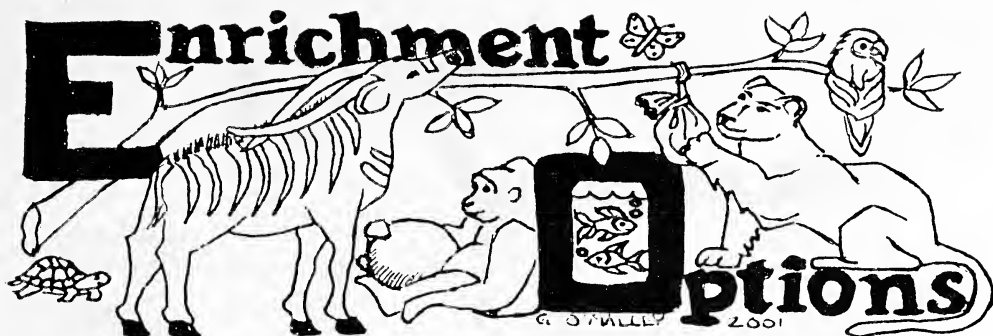
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*EO Editors - Dawn Neptune, Utah's Hogle Zoo
and Rachel Cantrell, Disney's Animal Kingdom*

More Enrichment Activities for Giraffe

By

Tina Fridman - Animal Keeper

Disney's Animal Kingdom, Lake Buena Vista, FL

Disney's Animal Kingdom currently houses 0.5 reticulated giraffe. Here at Disney's Animal Kingdom we use the S-P-I-D-E-R model to help guide us through the enrichment process. By following the S-P-I-D-E-R (Setting Goals, Planning, Implementing, Documenting, Evaluating, and Readjusting) framework, we are able to maintain consistency in our enrichment initiatives and follow specific steps in order to ensure that our enrichment ideas meet their goals. For more information on the "spider framework", refer to www.animalenrichment.org. Below are two examples of enrichment devices we have developed for our giraffe.

Browse/Biscuit Stick

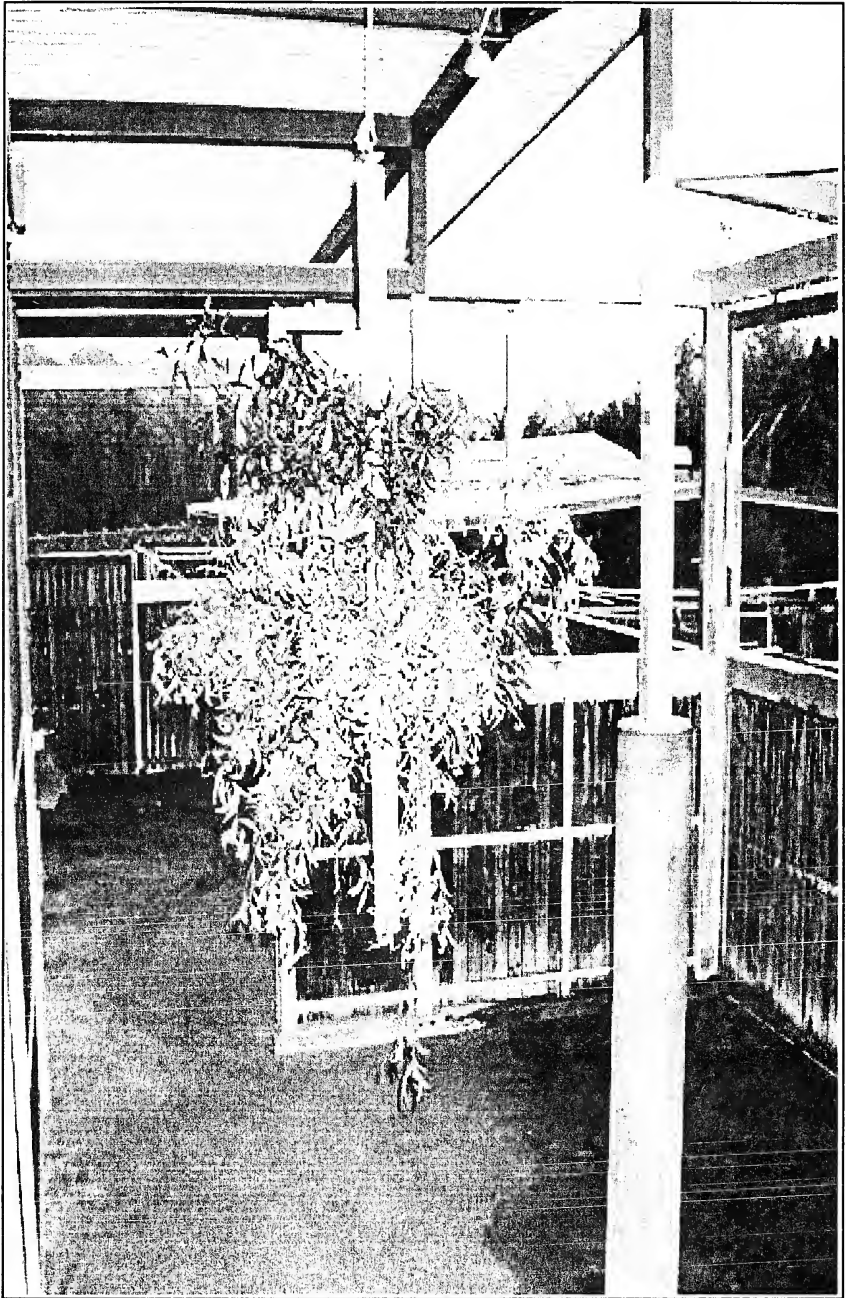
Another enrichment item used with the giraffe is the Browse/Biscuit stick. The Browse/Biscuit Stick was made to encourage foraging behavior. This item was easy and inexpensive to construct. We used a four-inch piece of pvc piping about nine feet in length in which we drilled various sized holes through out the pipe. A hole was also drilled two inches below the top of the pipe to insert a bolt and placed a nut on the outside of the pipe. This was used to hang the device from the rope.

Another hole was drilled two inches from the bottom of the pipe where a bolt and nut were placed through the pipe. A small plastic feed bowl with a hole drilled through the bottom was attached to the bottom bolt of the pipe using an eyehook secured with a washer and nut.

The bolt was put through the loop of the eyehook. The bowl dangles loosely about three to four inches from the bottom of the pvc pipe.

The device is hung from a rope in the holding yard. The giraffe cannot reach the rope. The rope is threaded through two pulleys that are attached to the ceiling of the holding yard. This allows us to raise and lower the device with ease from outside of the yard.

Browse is placed in the various size holes. After inserting browse, the biscuits or other treats are placed inside one of the larger holes on top of the pipe. The biscuits get caught on the browse sticks inside of the feeder. When the giraffe pull the browse out, the biscuits drop to the bottom and land in the feed bowl.

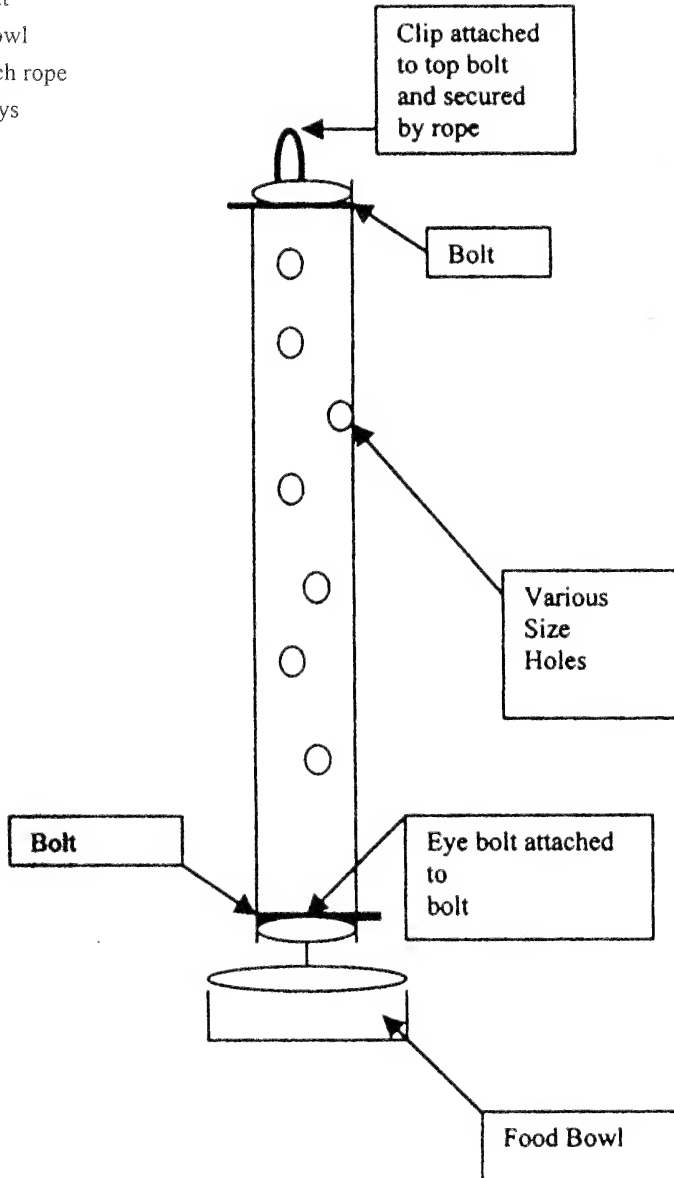


Browse biscuit stick hanging in an off-exhibit area.
Filled with browse and biscuits inside the stick.

Browse / Biscuit Stick

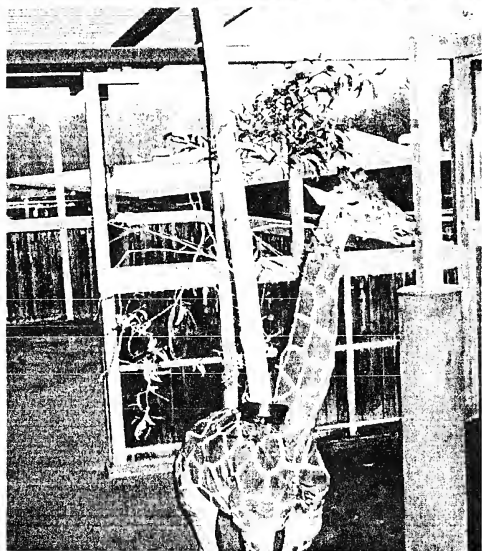
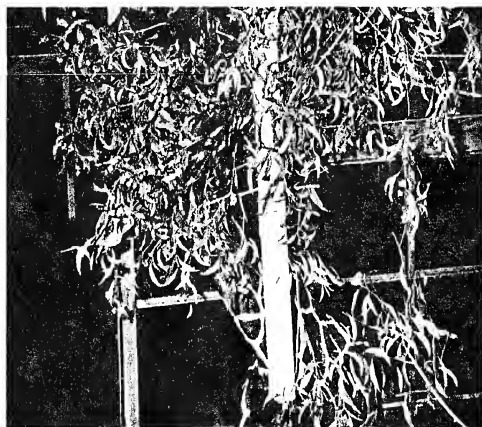
Supplies Needed

- Clip attached to top bolt and secured by rope
- 1 - Nine-foot piece of four-inch pvc pipe
- 1 -clip
- 2 - 3/8 inch by 2 1/2 inch carriage bolts with two nuts
- 1 - eyebolt and nut
- 1 - plastic food bowl
- 35 feet of 5/16 inch rope
- 2 - 5/16inch pulleys

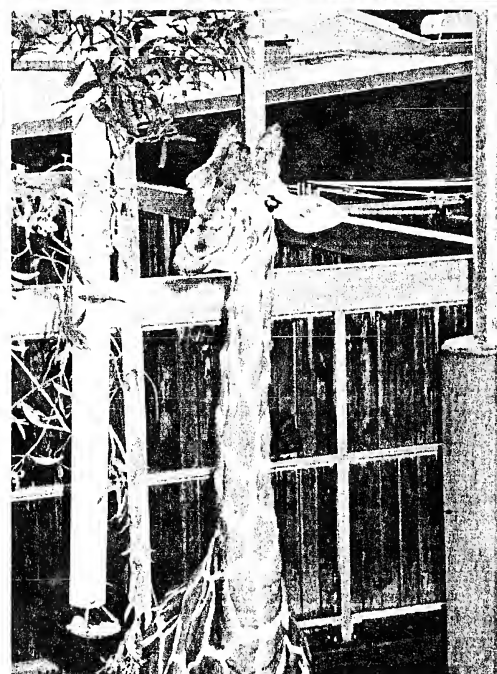


Our giraffe interact with these enrichment items on a regular basis. Each device is on a rotating schedule. We hang each of these enrichment items in their yard two to three times a week. Every time they are used we try to present different food items in them.

We have observed the giraffe interacting with these devices throughout the day. Once they consume the food items, they spend time rubbing, scratching and investigating them for more food.



**Giraffe interacting with the
Browse/ biscuit stick hanging
in an off-exhibit holding area.**

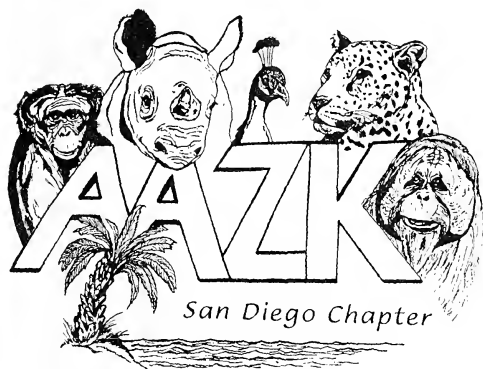


(Ideas appearing in this column have not necessarily been tested by the editors for safety considerations. Always think ahead and use good judgement when trying new ideas. You are invited to submit materials for the Enrichment Options Column. This might include recipes, toys, puzzle feeders, olfactory enrichment ideas, etc. Drawings and photos of enrichment are encouraged. Send to: AKF/ Enrichment, 3601 S.W. 29th St., Suite 133, Topeka, KS 66614-2054. Eds.)

Chapter News Notes

San Diego AAZK Chapter

The San Diego AAZK Chapter has had continued success over the last six months. As always, we have held many captivating speakers for our members to enjoy. With hands-on instructional roping courses, exciting AAZK member presentations on their conservation travels with wildlife, and enlightening educational instruction from our own librarians, our plates have been full. On top of these, we were also delighted to welcome Dr. Don Moore from the Prospect Park Zoo as one of our speakers.



For fundraising, we continued with our annual Kobey's Swap Meet, selling donated items at a local fair. In addition, we held an extremely successful event to raise money for the California Wolf Center in Julian, CA. Due to the recent wildfires that devastated San Diego, they suffered significant damage to part of their facility. However, their past experiences enabled them to save all of their wolves. With large donations for our silent auction and a fully catered wine bar fundraiser, we were able to raise \$1,400 that directly benefited their great organization.

In one month we will be holding the same exciting social fundraiser to benefit our own SD AAZK Chapter. Additionally, with the 1st ever International Polar Bear Husbandry Conference

in San Diego during February, our Chapter sponsored a hospitality event aboard a fantastic sternwheeler at the Bahia Hotel. With many of our own members in attendance throughout this extraordinary conference, we were pleased to help out in any way. On June 5th, we are looking forward to another great Bowling for Rhinos event with silent auction and raffle prizes. Best of luck to all of you with B.F.R.! We're excited for the next busy months to come.

AAZK Welcomes New Chapter

The Association would like to welcome its newest affiliated Chapter - the Chattanooga Chapter. Members are from the Chattanooga Zoo, Chattanooga, TN.

Officers for the newly chartered Chapter are:

President.....Heather Best
Vice President.....Allison Touchstone
Secretary.....Janella Stoudmire
Treasurer.....Regan Slonecker
Chapter Liaison.....Heather Best

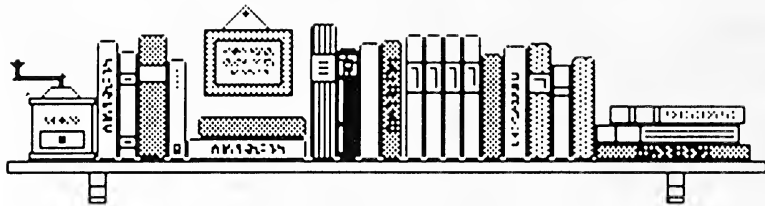
We wish this new AAZK Chapter every success with their projects and programs!

CHAPTER LOGOS

Does your Chapter have a new logo? Please keep us up-to-date if you change your Chapter logo. Also, new Chapters are encouraged to send in a copy of their logo as soon as they adopt one. Logos may also be sent as graphic file attachments (tiff or jpeg) to the email address listed below.

We will be producing another Chapter Logo Registry in 2005, so make certain your logo in our file is the most current one. When sending in logos, please include name of the artist/designer, date logo was adopted, and what, if any, significance is in the design - animals represented, etc.

**What's your AAZK Chapter been
up to? Send your Chapter News to
the Editor at:
akfeditor@zk.kscoxmail.com**



Book Reviews

Gorillas: Natural History & Conservation

By Kelly Stewart

Copyright 2003 ISBN 0-89658-624-3

Voyageur Press, Inc., P.O. Box 338, Stillwater, MN 55082 USA

1-651-430-2210 or books@voyageurpress.com

72 pp., Paperback \$16.95

*Review by Beth Moore, Animal Keeper
Disney's Animal Kingdom
Lake Buena Vista, FL*

In *Gorillas: Natural History and Conservation* Kelly J. Stewart covers considerable information in a manner that is friendly to the layperson. Topics from the origins of apes to the current status of gorillas in the wild are included. Many sections will also appeal not only to the general public but also to zoo professionals.

Dr. Stewart holds a PhD from the University of Cambridge, studied with Dian Fossey and spent two and a half years as Co-Director of the Karisoke Research Center. One of her goals is to bring science to the general public. She succeeds with this book. She is able to translate her scientific experience into terms that the layperson can follow, which keeps her writing interesting despite including heavier topics such as taxonomy, social dynamics, mating strategies and even infanticide. Dr. Stewart also brings her extensive field experience to this book. She opens with a heart-stopping account of being charged by a silverback in the mountains of Africa, explains the differences between the gorilla subspecies, and discusses the pros and cons of eco-tourism.

The photographs in *Gorillas* are fabulous. Some photographs may be familiar to gorilla fans with contributions from photographers such as Michael Nichols, Karl Ammann and Noel B. Rowe among others. The pictures of gorillas in their natural habitat engaged in social interactions will appeal to everyone. One picture of a severed gorilla head for sale in a market may need interpreting for younger readers, however.

While the general text is aimed at the layperson, professionals and volunteers familiar with gorilla natural history may also find this book useful. There is a map in the back depicting the ranges of the different gorilla subspecies. However, it can be slightly confusing because the legend lists only the scientific names, requiring that the reader flip back through the book if they can't remember which subspecies is which. Also in the back is a "Gorillas Fact File" that is useful when referencing quick facts to share with the general public. The recommended reading section should please zoo educators and keepers seeking further education for themselves or as suggestions for interested family or friends.

Gorillas: Natural History & Conservation definitely fulfills the author's goal of scientific writing that will appeal to the general public. From the text to the photographs it is informative and understandable. It should prove a valuable "hook" for zoo professionals introducing their passion to friends and family.

True Vipers: Natural History and Toxinology of Old World Vipers

By David Mallow, David Ludwig, Goran Nilson 2003

Krieger Publishing Company, 1725 Kreiger Dr., Malabar, FL, 32950

ISBN#0-89464-877-2

410 pgs. Cloth, 71 color plates \$79.50

*Review by Diane Barber, Curator of Ectotherms
Fort Worth Zoo, Fort Worth, TX*

The authors' objective when writing this book was "to furnish the reader a summary of taxonomy, general biology and toxinology for vipers." They have indeed accomplished their goals, producing a work that has become a comprehensive and thorough resource for all those interested in learning about the Family Viperidae.

This book covers all 14 genera in the Family Viperidae. It provides detailed species accounts for the 85 species currently described and 71 color plates. Although little to no information exists for some species, all of the species are included in the book. A thorough review of literature during the publication of this book resulted in an extensive bibliography, which covers 60 pages.

The introduction contains a good overview of "true vipers'" venom. Sections on venom apparatus, production and extraction, composition and function, effects, treatment and antivenin usage are reviewed.

Each species account includes a description, taxonomy, distribution, habitat preferences, diet, behavior, reproduction, and information on species-specific bite and venom. Captive husbandry techniques are detailed for many species, and there is excellent referenced information included in the bite and venom sections.

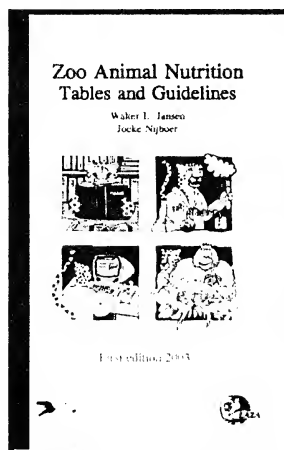
Professional and amateur herpetologists will find this book a useful resource to include in their library collections.

Book Announcement

"Zoo Animal Nutrition Tables and Guidelines"

by Walter L. Jansen and Joeke Nijboer, EZNC Amsterdam

Since its establishment in January 2002, the European Zoo Nutrition Centre (EZNC) has participated in many worthwhile activities. The most visible result of all is the recent publication of "Zoo Animal Nutrition and Guidelines". This handy, inexpensive, pocket-size booklet contains a wealth of information on the subject. The chapters and tables on energy requirements, recommended nutrient levels and foodstuff analysis contain indispensable information for everyone who regularly or even irregularly is involved in design and evaluation of zoo diets. With additional material it can also be very useful in course work or similar educational activities. Rapid developments in zoo nutrition will make regular new editions necessary, if the zoo community acknowledges the importance of this publication and makes extensive use of this booklet, this will facilitate future editions with the newest figures and insights incorporated. For details on price and shipping costs please email: info@EZNC.org or visit <http://www.EZNC.org>



Training Terminology—Part 3

Reinforcement

*By Beth Stark, Chair
Animal Behavior Management Committee*

Last month, we discussed some basic principles of operant conditioning. This month, we will continue with a discussion of some of the basic training tools within an operant conditioning program.

Bridging Stimulus – *A stimulus that pinpoints the exact moment that the behavioral criterion (for that approximation) is met. The “bridge”, as it is often referred to, (often a clicker, whistle or word) communicates to the subject that it has performed correctly and often signals that additional reinforcement is on the way. It “bridges” the gap between the time the correct response is given and the time the additional reinforcer is delivered. It is a stimulus that can act as both an S^D (See cue or discriminative stimulus) and a secondary reinforcer.*

The bridge (often a clicker, whistle or word) is one of the most important communication tools a trainer has in his or her training “toolbox.” Whether a clicker, whistle, word or hand signal, it lets the animal know the exact moment of its behavior that is being reinforced. The bridge should be short and concise (one click, a 1/2-second whistle burst, a 1-syllable word) because, in essence, everything that the animal is doing at the time of the bridge is being reinforced. For example if the word “excellent” is chosen as the bridge, it would typically take a full second to say. During that second, the animal may have not only performed the desired response, but also have completed the behavior and moved on to something else. A bird that is being trained to station on a perch might be bridged for staying in one place. However, during the time it takes to say “excellent,” the bird could have already begun to move elsewhere. The timing of the bridge is crucial; bridging too early or too late can lead to the reinforcement of a different and less desirable behavior. For example, an animal being trained to perform the “mouth open” behavior should be bridged when the mouth is wide open. If the bridge is given as the animal is beginning to close its mouth, that is exactly what will be reinforced – closing the mouth. If the bridge is consistently late, the trainer could be training a mouth close rather than a mouth open.

Primary Reinforcer or Unconditioned Reinforcer – *A reinforcing event that does not depend on learning or previous experience to achieve its reinforcing properties (e.g., biological need: food, water, warmth, sex).*

Most trainers rely on preferred food items as primary reinforcers for animals. Because all animals need food, food items that are generally part of an animal’s natural diet are inherently reinforcing. For example, carnivores eat meat. Therefore, it is safe to assume that a lion or tiger will eat chunk meat or even a processed meat diet. These items can be used as primary reinforcers in a training session. Similarly, a grape might be a primary reinforcer for a toucan. While we can assume that a natural food item will be reinforcing for all animals, it is advisable to offer food outside of training sessions first to make sure the animal does, in fact, like it. This would also be a good opportunity to identify favorite food items that could be used as reinforcers.

Secondary Reinforcer or Conditioned Reinforcer – *An object or event (stimulus) that initially may mean nothing to the animal but becomes reinforcing through pairing with a primary reinforcer or other conditioned/established reinforcer.*

Secondary reinforcers must be conditioned to actually become reinforcing and can be valuable in a training program. As described above, primary reinforcers are naturally reinforcing. There are

other items or actions that may be neutral or even aversive to the animal at first. However, when paired with a positive reinforcer – something the animal is known to like and will work for – the neutral or aversive item can begin to take on reinforcing qualities. Over time, the animal can come to like and look forward to these items, which can then be considered reinforcers. Rubdowns can be conditioned as secondary reinforcers for some animals. Favorite toys or other enrichment can also be secondary reinforcers.

The bridging stimulus, or bridge, is a secondary reinforcer. Initially it has no meaning to the animal. However, when paired with a favorite food item (i.e., click and treat, click and treat, click and treat, etc.) the bridge (clicker) becomes reinforcing to the animal to the point that when the bridge is used, the animal will begin to look for the treat.

Humans use secondary reinforcers on a regular basis. Money, on its own, has no reinforcing value to us. It is what money will buy that gives it reinforcing qualities. A pat on the back from a boss or a coworker can also be a secondary reinforcer, as it signifies a job well done. However, without hearing “good job” while receiving the pat on the back, the employee might perceive something negative from the interaction.

Selective or Differential Reinforcement – *The act of reinforcing specific criteria of desirable responses to shape a specific behavior; the reinforcing of selected responses of higher quality to improve performance.*

When training behaviors, we often use shaping by successive approximations, where the behavior is trained one step at a time. Each step has associated with it certain criteria. Once a step is completed, the trainer can (and should) bridge and reinforce only those responses that meet the specific criteria. This method of reinforcing communicates to the animal that only a certain level of response will be accepted. The animal learns from that and should offer only the higher level of performance. For example, a tiger that is trained to lift its front paw for inspection can be trained to do so to a certain height by bridging and reinforcing only those responses in which the tiger raises its paw to the desired height.

Stay tuned for next month's installment when we discuss more training tools involving cues and reinforcement. For more information about training techniques, go to www.aazk.org and click on Animal Behavior Management Committee.

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THANKS !

A Discussion on Whether the Use of Tasers®, a non-lethal weapon, is an Effective Means of Controlling an Exotic Animal in an Escape Situation

By
Ed Hansen
Risk Management Coordinator
City of Tucson, Tucson, AZ

Tasers® are a battery-operated weapon that discharges high voltage energy by means of an electrical charge. They are also commonly known as “stun guns”. They were primarily developed for law enforcement and correctional officers to utilize in close contact areas as a means of non-lethal force. Questions have recently been circulated in the zoological profession, as to whether Tasers® would be an effective means of controlling a large exotic animal in an escape or capture situation.



Taser®

How Tasers® Work

Tasers® come in varying shapes, but most take on the appearance of a handgun. Lighter voltage Tasers® look similar to a short club. The Taser® utilizes compressed nitrogen to discharge two pointed probes on small filament wires that remain attached to the handheld unit. These probes are approximately two inches (~5cm) in length and are pointed, but not sharpened. They have barbed tips, similar to fish hooks, that enhance their ability to penetrate up to two inches of clothing. Direct contact with the skin, or penetration into the skin is not necessary for electric discharge.

The probes have a range of only 15 feet (5 meters) and both must strike the target to create the electrical sequence necessary to have an effective charge. The probes are discharged at a rate of 300 feet/second. The top probe fires in a straight line while the lower probe fire at an eight-degree downward angle. The greater the space between the probes, the more effective the electrical charge. Once the probes strike the target, there is an automatic five-second burst of electrical energy that disables the target.

The Taser® operates on simple battery power, usually eight AA batteries. Dependant upon the model utilized, the Taser® will deliver up to 18 watts of power, equivalent to 50,000 kV at peak output. The unit weighs anywhere from 9oz. to 18oz. (255-510 grams) depending on the style. If both probes strike the target and remain on the target, there is a greater than 85% success rate of takedown.

The five-second burst of energy effectively “jams” the muscle motor control of the target. In plain English, the target is fully aware of their surroundings and can process thought, but is unable to act on the thought due to the inability to control their muscles. The target will usually drop to the ground and is incapable of performing any coordinated action.

After five seconds, the target regains instantaneous control of their muscles and all motor reflexes. The operator can continue to key the trigger after initial the five-second burst to deliver additional

energy to the target. The level of energy delivered may drop off gradually to minimal voltage when the trigger is in constant tension. Probes can be released from the front of the weapon at the "barrel" and the weapon reloaded in seconds, dependant upon the ability and training of the operator, or the probes can be released and the weapon utilized as a close contact hand held weapon.

Tasers® are not classified as a firearm and permits are not required in most states, but you must check with local law enforcement facilities in your state for specific permitting requirements.

Advantages

Tasers® are similar to any firearm in that they have a safety, but once the safety is released, they can be accidentally discharged. However accidental strikes, barring a secondary accident, are non-fatal. The energy charge from a Taser® will not affect any other person who might be in physical contact with the target. Tasers® have been fired on targets wearing internal pacemakers, with no adverse effects. Water will not conduct the electrical charge back to the operator or any individual who might be in physical contact with the target. Striking a grounded object (fencing, trees) will not harm the operator and there is no worry about ricochet or down range targets. There are no limitations on body size for effectiveness or harm, but due to the resulting contraction of muscles, they should not be utilized on a target that is known to be pregnant. Complete motor skill recovery is achieved after five seconds, or if the operator continues to depress the trigger, motor skill is acquired five seconds after the trigger release. Optimal battery condition provides longer and more effective releases of energy.

Limitations

The Tasers® have a range that is limited to 15 feet (5 meters) for commercial use. Law enforcement range is normally 21 feet (6.4m). Tasers® are primarily designed to strike a target that is stationary or one that is moving directly towards or away from the operator. Tracking a target that is in lateral motion, leading that target and realizing a successful strike is difficult for an untrained operator. Once the probes are lodged, the movement of the target out of the 15-foot limit (think leaping or bolting animal) may dislodge them. The probes are two inches in length, and are barbed to better attach to the clothing of the target. It is unknown how effective the probes would be in the dense fur of some species. Tasers® have been successfully utilized by law officers in the field on varying types of large hoofstock and overtly aggressive canines.

Should the operator or another person inadvertently come in contact with the tips of the two probes while they are being automatically discharged that person will also be energized. Grabbing or coming in contact with the trailing wires will not result in a system shock.

Tasers® were developed to assist law officers in placing their hands on the target. They produce an electrical charge that last for five seconds, incapacitates the target just long enough to place them in handcuffs or gain control by a group of officers. The effective burst of energy lasts only five seconds, and unless the trigger charge is maintained, in five seconds the target is fully functional and twice as angry.

Discussion

Tasers® in a zoological setting *could* be utilized as a self-defense weapon in the case of a contained animal escape in a holding area. Their use, as a takedown weapon in an open area would not be as effective as other weapons at the disposal of a shooting team. The five-second recovery time for the target is critical, and it must again be emphasized that the target regains complete control over bodily function five seconds after the weapon trigger is released. This might leave time for a keeper to overcome the shock of animal escape, confrontation, discharge of weapon, and escape a life-threatening situation.

To keep this weapon contained in a mounted cabinet out of immediate reach would not be effective. For the weapon to be effective in a life-threatening emergency, it would have to worn in a holstered

fashion by the animal keeper, similar to pepper spray. There are those that might argue that this emergency plan, obviously plans for a failure of some nature.

Make no mistake, Tasers® are weapons and before incorporating an energy release weapon into a zoo's arsenal of defense, *every* keeper would need thorough, continuous training and yearly certification. Management would have to carefully consider the potential liabilities of incorporating an emergency use, defensive weapon into the toolbox of the animal keeper. As with any tool, consideration must also be given to the potential for misuse or abuse of the product in a manner not consistent with its' intent by the manufacturer.

Taser® is a registered product of:

Taser International Inc.
7860 E. McClain Drive
Scottsdale, AZ 85260
www.airtaser.com

Comments can be directed to the author through the AAZK Web Page (www.aazk.org).

Zoo Keeper Safari

I will again be leading a trip to the Lewa Wildlife Conservancy in Kenya **January 4-17th & February 13-26th, 2005**. The dates have been moved to miss the Christmas rush! Total cost will be roughly \$3,300/person (depending on your city of departure). This includes round-trip airfare to Nairobi, Kenya, round-trip Air Kenya flights directly onto Lewa, transfer fees, 10 nights at the "Lewa Safari Camp" (luxury camping including showers/bathrooms within each tent-see www.lewa.org), all meals, game drives and hotel accommodations one night in Nairobi.

Drinks and tips (approx. \$50/person for entire stay) are not included.

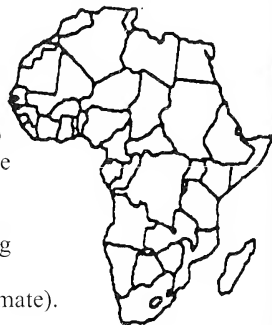
Additional/optional trips:

- \$20 camel ride or horseback (great way to view game)
- \$200 Il Ngwesi overnight trip (sometimes this fee is waived for us)
- \$125 Taissia overnight trip (excellent community lodges which have won many tourist awards)
- \$66 Samburu day trip
- \$66 Sweetwaters (Jane Goodall's Chimp reserve) day trip/shopping

Rates are based on double occupancy (we can help you find a roommate).

Past trips have been so successful that we had to expand to more than one trip/year. The best part about this trip is that proceeds from the safari camp go directly into conservation at Lewa. What more could a keeper ask for? A fantastic safari while donating to conservation! As "friends of Lewa", we are given a special rate (almost half the normal rate)! Everyone needs this opportunity to see first-hand how "Bowling For Rhinos" funds are spent!

Please call Patty Pearthree at 919-678-0449 or email ppear3@aazk.org if interested. Space is limited to 13 people/trip. First priority will be given to zoo professionals and travel companions. Zoo volunteers/docents are also welcome if space is available.



Legislative/Conservation Update

Compiled by Georgann Johnston
Legislative Advisor
Sacramento, CA



Business Backs Conservation

Office Depot, the Nature Conservancy, Conservation International and NatureServe have formed the Forest & Biodiversity Conservator AC9, the last condor captured in 1987 for the captive breeding program and released back into the wild in May of 2002. So far, six chicks have hatched in the wild since the condors were reintroduced into the wild, "but only one has survived past the fledgling stage" and is now nine months old and "is doing well." Source: *GREENlines Issue #2067 3-17-04*

California Condors Lay Eggs

Biologists believe that three California condor nests in Southern California now have eggs in them reports *SFGate.com, AP*. Only one egg has been visually confirmed but the behavior of the condors at two other sites in caves, "indicates that eggs have been laid there as well" and if the Condors successfully incubate them the eggs would be due to hatch in early April. The one confirmed egg is from 24-year old condor AC9, the last condor captured in 1987 for the captive breeding program and released back into the wild in May of 2002. So far, six chicks have hatched in the wild since the condors were reintroduced into the wild, "but only one has survived past the fledgling stage" and is now nine months old and "is doing well." Source: *GREENlines Issue #2067 3-17-04*

Lowland Gorilla Numbers Plummet

The population of Lowland Gorillas in Africa has dropped by an astonishing 12,000 gorillas since 1994, reports *BBC News Online*. The eastern lowland gorilla is found almost entirely in the Democratic Republic of Congo (DRC) which has been ravaged by war. The gorilla is also now threatened by a surge in the population due to coltan mining, a mineral that is used to manufacture pinhead capacitors in mobile phones and laptops. This has resulted in an increase in the bushmeat trade. International animal welfare groups are working with the DRC government to try to reduce this threat. Source: *GREENlines Issue #2077 3-31-04*

More Room to Roam Sought for Mexican Wolves

On the sixth anniversary of the reintroduction of Mexican wolves to Arizona and New Mexico, the Center for Biological Diversity has petitioned for changes in the management of the programs, reports *Canadian Press Online*. The Center requested that wolves be reintroduced directly into the Gila National Forest in New Mexico. It also asks that the wolves be allowed to establish territories outside boundaries of the designated recovery area within the Gila and Apache-Sitgreaves national forest, as well as require ranchers to remove dead livestock or make them unpalatable. The three changes were recommended in June 2001 by a panel of independent scientists who reviewed the program. Source: *GREENlines Issue #2077 3-31-04*

Right Whales Rebound

"There is growing optimism that the endangered North Atlantic right whale can come back from the edge of extinction," after surveys of their only known winter calving area off the coast of Georgia and north Florida discovered that "a previously undocumented group of as many as 17 female right whales have started using the calving grounds" reports the *Washington Post, AP*. Although scientists are unsure of why the new group started using the calving grounds or how something so big has escaped detection, but are "encouraged" by the 13 newborn calves seen so far this year and the shorter calving intervals among the whales. Source: *GREENlines Issue #2070 3-22-04*

Few Protections for Endangered Birds

A new report by Birdlife International warns that "one third of the 1,200 species of birds around the globe threatened with extinction have yet to receive any significant protection" reports *MSNBC*. The report, "State of the World's Birds," is based on reviews by 100 top experts and finds the birds that do receive some protection, "for only 4% of species is the benefit judged to be significant." Of the world's known bird species, 1,211 - one in eight - face extinction, with 64% threatened by

“unsustainable forestry practices.” Since 1500, 129 bird species have gone extinct. FYI: <http://www.birdlife.org/action/science/species/sowb> Source: *GREENlines Issue #2064 3-12-04*

Tiger Territory Protected in Myanmar

The government of Myanmar announced plans to triple the size of the Hukawng Valley reserve to cover 7,700 square miles, says *BBC News Online*. A 2003 survey found that only 150 to 200 tigers were left. It is hoped that the expanded reserve can hold up to 1000 tigers. Much work will need to be done in community education to prevent the hunting of tigers, prized for their skins and use in Asian medicine. “At \$200 per kilo, the profits from even a small tiger could be equivalent to 10 years of income for many in the area,” stated Alan Rabinowitz, director of the science and exploration program at the New York-based Wildlife Conservation Society. Source: *GREENlines Issue #2079 4-2-04*

CITES Backs Ivory Ban

The Standing Committee for the Convention on International Trade in Endangered Species (CITES) has rejected a bid by South Africa to sell 60 tons of stockpiled elephant ivory without first meeting a list of conditions set out by the CITES secretariat reports the *East Kenya Financial Standard*. The move to put the sale on hold was spearheaded by Kenya and received the backing of eight other African countries. The CITES committee also “took steps to end the domestic ivory markets within all African countries.” Source: *GREENlines Issue #2082 4-7-04*

Invertebrates Are Species, Too

Scientists recently gathered at the American Museum of Natural History for the “Expanding the Ark” conference to discuss conservation strategy for invertebrates. Although invertebrates - insects, crustaceans, worms, shellfish, and spiders - are far more numerous and diverse than vertebrates, they are “usually well down the list of species given protection from extinction,” says *National Public Radio*. Invertebrates make up only one-fifth of the species protected under the Endangered Species Act. Scientists are “racing to find and describe rare invertebrates before they disappear.” Source: *GREENlines Issue #2080 4-5-04*

Tribes Prepare for Wolf Management

Northern Arapaho and Shoshone tribes are trying a novel (at least for Wyoming) approach to prepare for managing wolves and grizzlies on the 2.3 million acre Wind River Reservation, they are trying to learn more about them before trying to kill them reports the *Casper Star Tribune, AP*. Thanks to a USFWS grant the tribes “plan to survey populations of both animals” in order to “determine how many of the animals can be killed by reservation hunters once they are delisted.” Source: *GREENlines Issue #2082 4-7-04*

Record Turtle Release

Venezuela has “established what it believes is a record for releasing an endangered species back into the wild by setting free tens of thousands of protected Arrau turtles into the Orinoco River” reports *Planet Ark, Reuters*. Thousands of the “palm-sized, green turtles” were released as part of a ten-year program that has restored a total of 166,000 turtles to the wild. Source: *GREENlines Issue #2083 4-8-04*

Judge Tells Rey to Give It Up

A federal judge has ordered Forest Service overseer Mark Rey to provide information on the Bush administration's motivation behind suspending updated National Forest Management Act rules protecting nearly 200 million acres of national forest habitat reports *Grist Magazine*. Rey has been using “evasion and secrecy” to avoid releasing documents requested in a Freedom of Information Act lawsuit brought by Defenders of Wildlife and the Endangered Species Coalition. According to Rey the rules “were not technically suspended, but simply put into legal limbo” to facilitate an overhaul of forest protections that go back to the Reagan era. This is the “biggest-ever rewrite of our nation's forest management policies,” said Defenders, new rules fostered to “diminish public and scientific input in the planning process, gut many key wildlife protections, and allow increased logging on public land.” Source: *GREENlines Issue #2083 4-8-04*

Editor's Note: GREENlines Issues are a daily news digest from the Endangered Species Coalition about imperiled species and the people working to stop extinction. For more on what you can do visit - <http://www.stopextinction.org>

Institutions wishing to advertise employment opportunities are asked to send pertinent data by the 10th of each month to: Opportunity Knocks/AKF, 3601 SW 29th St., Suite 133, Topeka, KS 66614-2054. Please include closing date for positions available, and when setting these dates keep in mind that because of bulk-mail, most readers do not receive their AKF until the middle of the month or later. There is no charge for this service and fax or e-mail listings of positions which become available close to deadline are accepted. Our Fax is (785) 273-1980; e-mail: akfeditor@zk.kscoxmail.com< Listing must be sent as MS Word attachment. To post a position on the AAZK website, have listing to email address above by the 25th of the month for posting on the first day of the following month. We are no longer located at the Topeka Zoo, so please note new address to avoid delays in processing.

Elephant Handler - Natural Bridge Zoo, Natural Bridge, VA

Send resumé to: Natural Bridge Zoo, P.O. Box 88, Natural Bridge, VA 24578 or Fax (540) 291-1891 or phone (540) 291-2420 or email NaturalBridgeZoo@hotmail.com< **Responsibilities:** the care and husbandry of two (2) African elephants (19 years old) in free contact. **Requirements:** Minimum of three (3) years experience working with elephants. Must be able to do rides, demonstrations and give talks to the public. Looking for an eager, energetic, friendly, self-motivating person. Housing available.

Animal Collection Manager - Red River Zoo, Fargo, ND

Send resumé and cover letter to: Paula Grimestad, Executive Director, Red River Zoo, 4220 21st Ave.S.W., Fargo, ND 58104. For more information call (701) 277-9240, visit our website at www.redriverzoo.org or email pgrimestad@redriverzoo.org< Resúmes **must be received by 17 May 2004.** **Responsibilities:**Duties include collection planning, coordinating veterinary care and specimen acquisition and disposition. **Requirements:** Qualifications include a Bachelor of Science degree from an accredited four-year college or university with a major in zoology or related life science field. Qualified candidates must have at least three (3) years experience in animal care at a zoo or related facility.

Zoo Keeper Africa – 2 positions (1 Keeper position has June start date; the other a July start date)

Animal Training Coordinator/Zoo Keeper – 1 position (position to be filled in May) – All positions at Frank Buck Zoo, Gainesville, TX

Interested persons should apply with the City of Gainesville Human Resources Dept., 200 S. Rusk St., Gainesville, TX 76240; phone – (940) 668-4590; www.gainesville.tx.us. **Positions open until filled.**

The Frank Buck Zoo, located in the small town of Gainesville, TX, is seeking team-oriented individuals for two keeper positions and one Animal Training Coordinator position in our new “African Savannah”. Gainesville has small town appeal and a global attitude. Interested candidates should have the same. **Responsibilities:** a person in a Keeper position will be responsible for the day-to-day care of the animals in this section, including feeding and cleaning, exhibit maintenance, grounds maintenance and education of the public. The Animal Training Coordinator will be responsible for keeper duties in the African section of the zoo, swing keeping as needed in other sections of the zoo and coordinating/overseeing the zoo's animal training programs. **Requirements:** Candidates for all three positions must have an attention to detail, good communication, people and organizational skills, be a team player, and be motivated. All positions require an Associate's or Bachelor's degree in one of the life sciences and/or the right combination of exotic animal experience. Training experience or coursework is preferred for the Animal Training Coordinator. Salary range is \$20,951 - \$35,906 annually based on experience and includes a benefits package.

Keeper for Australian Animals – Kangaroo Conservation Center, Dawsonville, GA

Send cover letter, resumé and salary history to Fax 706-265-6329, e-mail: rjndwn@aol.com or mail: 222 Bailey-Waters Rd., Dawsonville, GA 30534. We are a **non-smoking AZA facility** located in the North Georgia Mountains, home of the largest kangaroo collection outside Australia. Our facility is known for its outstanding animal care and spacious exhibits of Australian wildlife. Visit our website at www.kangaroocenter.com for more information. Full-time career position open for an enthusiastic, mature and responsible individual with interest in Australian wildlife. **Responsibilities:** Duties include habitat cleaning and maintenance, diet preparation and feeding, landscaping and exhibit construction, assisting with veterinary care, educational tours and record keeping. **Requirements:** Bachelor's degree preferred; keeper experience required. Ability to operate heavy equipment including 2-5 ton standard shift trucks and tractors is required. Mechanical and construction skills strongly preferred. Must be physically strong enough to carry 50+ lb. Most work will be performed outdoors year-round. Rotating work schedule includes weekends and some holidays. Must reside within 25 miles from Center. Starting salary negotiable; commensurate with experience. Benefits include fully paid health care policy, paid vacations.

Facility Maintenance Keeper – Kangaroo Conservation Center, Dawsonville, GA

Send cover letter, resumé and salary history to fax 706-265-6329, e-mail: rjndwn@aol.com or mail: 222 Bailey-Waters Rd., Dawsonville, GA 30534. We are a **non-smoking AZA facility** located in the North Georgia Mountains, home of the largest kangaroo collection outside Australia. Our facility is known for its outstanding animal care and spacious natural exhibits of Australian wildlife. Visit our website at www.kangaroocenter.com for more information. Full-time career position open for an enthusiastic, mature, creative and responsible individual with interest in design and maintenance of an Australian wildlife park. **Responsibilities:** Duties include maintenance of buildings (indoors & out) and landscape maintenance of 87-acre facility. **Requirements:** Applicant should have interest in exotic and native plants and be knowledgeable about plant care, including pruning, spraying, fertilizing, and planting. Should be able to work responsibly inside animal habitats. Ability

to operate lawn maintenance and heavy equipment including 2-5 ton standard shift trucks and tractors is required. Construction skills required. Must be physically fit for a position that will require working outdoors year-round. Work schedule may include weekends and some holidays. Must reside within 25 miles from Center. Starting salary negotiable; commensurate with education and experience. Benefits include fully paid health care policy, paid vacations.

Catoctin Wildlife Preserve and Zoo (Thurmont, MD) is looking for professionally-oriented people to grow with us. Information about our facility may be viewed online at www.CWPZoo.com< The following four (4) positions are available immediately and until filled. Duties include all aspects of animal care including feeding, cleaning, observations, monitoring, interaction with the public and assistance with department improvement projects. Salary is commensurate with experience (range: \$16,000 to \$25,000). Support for medical, dental and prescription health care and attendance at AAZK and other conferences and seminars. Paid vacation after one (1) year. Flexible work schedule and personal days. See the following four (4) positions.

Send cover letter and resumé with salary requirements to R. Hahn, Chief Animal Person, Catoctin Wildlife Preserve and Zoo, 13019 Catoctin Furnace Road, Thurmont, MD 21788 or fax at (301) 271-2673, or email to Rickhahn@CWPZoo.com<

Lead Animal Care

Responsibilities: Supervises all Animal Care positions including volunteers and seasonal interns. Must be knowledgeable in the basic husbandry and natural history of mammals and birds, well-organized and able to work well with all staff and visitors. **Requirements:** Must have at least five (5) years experience in an open-to-the-public facility and at least three (3) years of supervisory experience in middle management. College degree a plus but will substitute experience for sheepskin. Must be able to finish the standard requirements for this position description. Salaried. Reports to General Curator/Registrar.

Animal Caretaker I

Requirements: requires one (1) year full-time minimum experience in the care, handling and feeding of animals in a public or private setting. Experience with a wide range of exotic hoofstock and small mammals preferred. Must be able to lift 100lbs. and work some weekends and holidays.

Avian Specialist

Works primarily with psittacines and gallinaceous birds. Flamingos, ibis, doves, kookaburra, mud hens, condor, owl, cranes and ratites are also in collection. **Requirements:** at least two (2) years in a private or public facility maintaining and breeding the above taxa. Knowledge of incubation and rearing chicks is required. Reports to Lead Animal Care.

Reptile Caretaker II

Requirements: requires minimum of three (3) years full-time experience in an exhibition setting working with a diverse collection of reptiles, including venomous with an emphasis on the propagation of tortoises, varanids and boidae. Must be neat and creative with exhibit design and maintenance. Good record-keeping skills a must.

Animal Keeper/Guides - Soco Gardens Zoo, Maggie Valley, NC

Several positions available for 2004 season, May through October. Salary \$240.00 per week, living quarters, utilities and uniforms also furnished. Please send cover letter and resumé to: Jim Miller, Soco Gardens Zoo, 89 Evans Cove Rd., Maggie Valley, NC 28751, as soon as possible. **Requirements:** Paid zoo experience preferred but volunteer experience acceptable; non-smokers; applicants must have strong, audible voices, neat appearance, good personalities, and must work well with co-workers as well as with the public. **Responsibilities:** duties include daily animal care of various primates, large and small cats, bear, parrots, wallaby, various reptiles, and others; exhibit cleaning and maintenance; various other maintenance duties; and educational lectures in a tour situation. Must lecture on both non venomous and venomous reptiles. Also, must have experience in handling non-venomous reptiles or a willingness to learn. Must be willing to work six days a week, including weekends and holidays.

Bird Keeper - Sacramento Zoological Society, Sacramento, CA

Send resumé to: Maggie Liguori, Animal Collections Manager, Sacramento Zoo, 3930 West Land Park Dr., Sacramento, CA 95822; (916) 264-8817; miguori@cityofsacramento.org< We offer good benefits (in a city with no snow) and lots of fun! **Position open until filled.** **Responsibilities:** looking for attention to detail in the areas of diet preparation, behavioral enrichment, observation, and research. Our zookeepers are good communicators, project-oriented and able to prioritize across seasons. **Requirements:** requires AS degree with two (2) years experience in a zoo bird collection, related experience may be substituted.

Mammal Zoo Keeper - San Antonio Zoo, San Antonio, TX

To apply for this position please send a resumé and cover letter to: San Antonio Zoo, Human Resources Department, 3903 N. St. Mary's Street, San Antonio, TX 78212 or by fax (210) 734-7291. The San Antonio Zoo currently has a need for a Zoo Keeper in our Large Mammal department. **Responsibilities/Duties:** Duties include daily cleaning, feeding, and maintenance of animal exhibits. Zoo Keepers observe, evaluate, and report animal behavior and condition to their supervisor on a daily basis. They assist in treating

Zoo animals in accordance with instructions from their supervisor or veterinarian. **Qualifications:** Minimum qualifications include ability to work weekends, holidays, and occasional after-hours assignments; valid driver's license; associate degree in wildlife management, zoology, biology, or related field preferred; and one (1) year of zoo keeping experience. The starting wage for this position is \$7.87 per hour.

Bird Zoo Keeper – San Antonio Zoo, San Antonio, TX

To apply for this position please send a resumé and cover letter to: San Antonio Zoo, Human Resources Department, 3903 N. St. Mary's Street, San Antonio, TX 78212 or by fax (210) 734-7291.

The San Antonio Zoo currently has a need for a Zoo Keeper in our Bird department. **Responsibilities/Duties:** Duties include daily cleaning, feeding, and maintenance of bird exhibits/enclosures. Zoo Keepers observe, evaluate, and report animal behavior and condition to their supervisor on a daily basis. They assist in treating Zoo animals in accordance with instructions from their supervisor or veterinarian. **Qualifications:** Minimum qualifications include ability to work weekends, holidays, and occasional after-hours assignments; valid driver's license; associate degree in wildlife management, zoology, biology, or related field preferred; and one (1) year of zoo keeping experience. Starting pay is \$7.87/hour.

Bird Department Supervisor – San Antonio Zoo, San Antonio, TX

To apply send cover letter with salary requirements and resumé to: San Antonio Zoo, Attn: Bird Supervisor Opening, 3903 N. St. Mary's Street, San Antonio, TX 78212 or Fax (210) 734-7291.

This position is one of two supervisors in the department. The Supervisor is responsible for assisting in the management of the third largest bird collection in the United States. **Responsibilities** include: observing and evaluating bird behavior and conditions, maintaining department records, training and evaluating subordinates. **Qualifications:** Bachelor's degree in wildlife management, zoology, biology, or related field, five years experience with exotic bird care in a zoo or similar environment, two (2) years supervisory experience, and strong communication and interpersonal skills.

Marine Science Program Director - Camp Orkila YMCA, Eastsound, WA

Contact: Paul Kamin, Camp Director; YMCA Camp Orkila; PO Box 1149, Eastsound, WA.; pkamin@cs.seattleyymca.org < Salary range is \$30K-\$35K, and could include housing. Full-time benefits include medical, dental, and life insurance, and 12% paid retirement. The Seattle YMCA is an equal opportunity employer YMCA Camp Orkila is seeking a director for our Marine Sciences programs to work at our beautiful Orcas Island site. **Responsibilities:** Position is responsible for program leadership of summer marine day and resident camps, training of 25 naturalists to work with 6500 middle school students in environmental education programs, and new grant funded programs including King Salmon Stewardship Institute for high school students, and an Marine Science Lecture Series for local Orcas Island community. Also responsible for care of a wide variety of species in our \$1M Marine Science Center that features 18,000-gallon aquarium, a small salmon hatchery, a popular touch tank and other similar educational exhibits. **Requirements:** Saltwater exhibit and system maintenance experience and animal collection skills would be significant plus.

Marine Science Specialist (Internship or Seasonal employment options) - Camp Orkila YMCA, Orcas Island, WA

Contact: Paul Kamin, Camp Director, Camp Orkila YMCA, PO Box 1149, Eastsound, WA 98245; pkamin@cs.seattleyymca.org; phone - 360-376-2678; fax 360-376-2267. Position could qualify as an internship. Housing would be available at camp. Salary commensurate with experience. Orkila is a 300-acre facility with 500+ beds, 17,000 annual guests, and a half-mile of beach on the NW corner of Orcas Island. Equal Opportunity Employer. This seasonal position will work from early spring through the summer. Camp Orkila operates a \$1million Marine Salmon Center and a variety of educational programs dedicated to Marine Sciences. Such programs include both day and resident summer Marine Camp programs; a high school student focused King Salmon Stewardship Institute, Marine Sciences units for over 6500 middle school students in environmental education and more. This position is designed to help Orkila transition with a new full-time Marine Sciences Program Director. **Requirements:** Candidate should have background to manage the care of the Marine Salmon Center and the "guest" animals in our 18,000-gallon aquarium, touch tanks, salmon hatchery, and other displays.

Big Cat Internships - Tiger Creek Wildlife Refuge (TCWR), Tyler, TX

As seen on Animal Planet in "Growing Up Tiger", TCWR is a division of Tiger Missing Link Foundation. **Commencement date:** On-going duration: three (3) months on a month-by-month basis. Summer (May-Aug) Internship Applications due March 1st. For contact information, application packet, additional information, and to see what past interns have to say about Tiger Creek: visit www.tigercreek.org. Are you interested in learning more about big cats or establishing a career path working in conservation as a zookeeper, a wildlife manager or a veterinarian? You can earn your STRIPES at Tiger Creek and obtain college credit through your college or university at the same time. Right now there are up to three (3) positions available consisting of a six (6)-day work week with a strong commitment for three (3) months. At Tiger Creek you are more than a worker, you are considered a friend and we strive to build long-term working relationships as we know you are the future animal caretakers! Based upon your performance after your training, you may be eligible for any permanent animal care positions that become available. **Requirements:** At least 20 years old and a junior in college. You should be capable of paying attention to details and following safety rules; you must have your own transportation to and from Tyler, TX; and you also provide your own food while here. We provide room; uniforms; materials and curriculum; and indoctrination and safety training. The Intern House has central heat and air, a full kitchen, a shared telephone line for incoming calls, Internet access for email and surfing, a TV with VCR/DVD, even

satellite so that you and the other interns can enjoy Animal Planet during your off hours! The intern house is fully furnished and dormitory-style with rooms being shared by two people. All of this and a few rescued dogs or puppies in the backyard...because we want your stay to be as comfortable as possible while here at Tiger Creek. The Tyler/East Texas area has a lot to offer, there is horseback riding available at no cost to our interns, lakes within beautiful parks, movie theaters, numerous local night clubs and plenty of restaurants and much more.

Environmental Interpretation and Wildlife Care Internship – Trailside Museums and Wildlife Center, Bear Mountain State Park, Bear Mountain, NY 10911-0427. Contact: Jennifer Verstraete at (845) 786-2701 ext. 278 or 265; email – clayne.keith-feller@oprhp.state.ny.us < Start Dates: Summer internship mid-May through mid-August; Fall internship late-August/early September through early November. Internship is unpaid, but provides knowledge and experience; written evaluation gladly given. Possible course credit if intern can arrange it. Interns will work at least three (3) days a week, including one weekend day. No housing available. We reimburse full payment for required pre-exposure rabies series. **Qualifications:** Enthusiasm, comfortable handling animals, motivated to learn. Must be 18 or older; preference given to college student looking for experience in the care of wildlife and in environmental interpretation. **Responsibilities:** 1) Provide care for permanently injured or orphaned park wildlife (mammals, birds, fish, amphibians and reptiles) in zoo setting. Under the supervision of a Senior Zookeeper will prepare food and diets, maintain enclosures and exhibits, and provide enrichment; 2) Interact with the public answering questions, interpreting exhibits, possibly developing and offering short interpretive talks.

Reptile Internship

To apply send a cover letter, resumé, and at least two (2) (preferably 3) references to: Kristen Wiley, Internship Coordinator, Kentucky Reptile Zoo, 200 L & E Railroad, Slade, KY 40376. Or send via email: kyreptil@pop.mis.net < Starting dates are flexible, but a minimum commitment of three months covering SPRING (April-June), or SUMMER (June - August), or FALL (September - November) is required. Deadlines for applications each year are: SPRING - February 1st; SUMMER - March 1st; and FALL - June 1st. The Kentucky Reptile Zoo, a nonprofit organization, is seeking a student intern for the 2004 Fall season. The zoo is an educational exhibit, reptile breeding and venom research facility located near Kentucky's Red River Gorge and Natural Bridge State Park. **Responsibilities:** The intern will assist in the captive maintenance of the zoo's reptile collection, collect admissions to the exhibit, give interpretive talks and interact with the public, assist with educational outreach programs, and perform other duties as assigned. In addition, the intern will be responsible for the completion of at least one research project related to the field of herpetology. The intern will **not** be involved in the handling of any venomous reptiles. **Requirements:** Desirable qualifications include a willingness to handle snakes and other reptiles on a daily basis, ability to communicate effectively with people, writing skills, orientation to details, and self-motivation. The intern will be required to work both Saturday and Sunday, with days off during the week. Students majoring in the biological or natural sciences are preferred. Interns are required to be either college students or recent graduates. Former interns have arranged for academic credit with their institutions. Interns have also been successful in finding zoo keeper positions, with a hire rate of over 95%! Benefits include experience with the most extensive and diverse collection of snakes in the United States, housing, and \$55/week to cover expenses. Personal transportation is recommended. A valid driver's license is required.

Big Cat Internship – Wildlife on Easy Street, Tampa, FL

For more information contact Scott Lope at 813-323-5991 or email at catfoto1@aol.com

Two (2) positions available for six-month internship at TAOS accredited non-profit big cat sanctuary. www.wildlifeoneasystreet.com < **Responsibilities** (include but are not limited to): daily husbandry, exhibit cleaning, diet preparation, feeding, operant conditioning and behavioral enrichment for the following species: lions, tigers, leopards, cougars, lynxes, servals, caracals, bobcats, lemurs and other exotic animals. We provide invaluable hands-on experience, on-site housing and utilities, safety training and educational materials. Advanced training and long-term employment opportunities exist for the right candidates. **Requirements:** applicants must be willing to work six days a week, some holidays and follow strict safety guidelines. Hard work ethic and love of animals more important than degree.

Internships - The Florida Aquarium, Tampa, FL

Internships are available in Animal Health, Animal Programs and Husbandry departments. Internships available year-round for varying lengths of time and can be tailored to the individual student's needs. Internships are unpaid but provide valuable hands-on experience. Interested persons should send resumé to: Human Resources, 701 Channelside Dr., Tampa, FL 33602. For more information visit our website at www.flaquarium.org < **Responsibilities:** food preparation, feeding, cleaning enclosures, assist with medical procedures, animal observations, daily record keeping, enrichment activities, assist with training sessions and shows.

Zoo Design Internship - ZooLex, Vienna, Austria

In 2002 the ZooLex Zoo Design Organization started to offer internships. Carlyn Worstell was our first intern. She finished her internship with the ZooLex Zoo Design Organization in September 2003 and is now working with the Wildlife Conservation Society at Bronx Zoo. We offer internships in Vienna, Austria. Interns who stay for a few weeks only, mainly work on the ZooLex Gallery. Interns who stay longer also complete a research project. You will find more information on ZooLex internships here: <http://www.zoolex.org/intern.html> < ZooLex

The following three (3) internship opportunities are available at the New Jersey State Aquarium - The New Jersey State Aquarium husbandry department is currently holding open enrollment on all our internships.

Avian Internship

Interested candidates should submit a cover letter and resumé, transcripts, three (3) letters of recommendation, and an application from our website at www.njaquarium.org. Please submit materials to: New Jersey State Aquarium, c/o Kyla Fox, One Riverside Drive, Camden, NJ 08103. Become familiar with daily activities involving our colony of African penguins, exotic birds, and reptile collection. **Responsibilities:** Duties include food preparation, exhibit maintenance, and creation of enrichment devices. **Requirements:** Candidates should be comfortable with public speaking and have course work in biology/psychology. Must be able to work outdoors and lift 50 pounds. Interns are required to complete a minimum of 120 hours and must be registered for college credits in either a two or four-year school. Internships may be completed during spring, summer, or fall sessions. All intern positions are on a volunteer basis and are unpaid.

Marine Mammal Internship

Interested candidates should submit a cover letter and resumé, transcripts, three (3) letters of recommendation, and an application from our website at www.njaquarium.org. Please submit materials to New Jersey State Aquarium, c/o Collette Caprio, One Riverside Drive, Camden, NJ 08103. Learn daily activities involving animal care and training with our Seal Team. **Responsibilities:** Duties include food preparation, exhibit cleaning, creating enrichment devices and observing training. **Requirements:** Candidates should be comfortable with public speaking, have course work in biology/psychology, prior animal experience, be able to work outdoors, and lift 50lbs. Interns are required to complete a minimum of 120 hours and must be registered for college credits in either a two or four-year school. Internships may be completed during spring, summer, or fall sessions. All intern positions are on a volunteer basis and are unpaid.

Fish and Invertebrate Internship

Interested candidates should submit a cover letter and resumé, transcripts, three (3) letters of recommendation, and an application from our website at www.njaquarium.org. Please submit materials to New Jersey State Aquarium, c/o Nicole Grandinetti, One Riverside Drive, Camden, NJ 08103. The Fish and Invertebrate department offers internships each semester to qualifying candidates. **Responsibilities:** The intern's main responsibilities will be assisting the biologists with their daily duties including exhibit and holding tank maintenance, food preparation, feeding, filter maintenance, and learning all aspects on maintaining saltwater exhibits. **Requirements:** Interns must complete 120 hours within the semester working two eight-hour days. The typical hours for the day are from 7:30am to 4:30pm. Interns are also required to be registered for credits through a two or four-year institution. All Interns work under a volunteer basis and are unpaid.

Internship Opportunities - National Aquarium in Baltimore

To apply for any of the following seven (7) internship positions go online at www.aqua.org/education/internships to obtain an application form. A complete application includes contact information, answers to brief statements listed, and a copy of college transcript. Complete applications should be sent to: National Aquarium at Baltimore-Internships, Pier 3/501 East Pratt St., Baltimore, MD 21202. Application Deadline: ongoing - 1 April 2004 for Summer and Fall 2004 terms; All interns must complete a minimum of 120 hours of work within the selected term. Interns must receive college credit for their internship. Internships are unpaid. For further information contact the National Aquarium in Baltimore's Internship coordinator at intern@aqua.org or call (410) 576-3888.

1) Aquarist Intern

Responsibilities: The selected candidate will assist the Aquarium aquarist staff with daily care of the Aquarium's invertebrates and fish. Assist with tank maintenance and cleaning; Prepare daily diets and perform daily feedings; Assist in the maintenance of back-up areas; Conduct precise record keeping; Perform special projects to be determined by the aquarist staff. **Requirements:** College juniors or seniors enrolled in an accredited college, pursuing a degree in Biology, Ecology, Environmental Science, or a related field. Must be able to lift 50 lbs, climb up a 6' ladder, and be able to squeeze across a 15' long x 12" wide platform.

2) Aviculture Intern

Responsibilities: The selected candidate will assist the Aquarium aviculture staff with daily husbandry activities in the South American Rainforest exhibit. Assist with and perform diet preparation and distribution; Conduct animal observations; Assist in the cleaning of holding areas, kitchen, and food prep areas; Provide enrichment to the aviculture collection; Perform special projects to be determined by the aviculture staff. **Requirements:** Interest in working with birds. Enrolled in an accredited college, pursuing a degree in Biology, Zoology, Animal Behavior, Ecology, Environmental Science, or a related field.

3) Herpetology Intern

Responsibilities: Tend the "Hidden Life" exhibits (large wall terrariums where small, neotropical lizards, frogs, snakes and invertebrates are on public display); Mist and clean the off-exhibit colony of small arboreal lizards; Mist, clean and otherwise help tend the large, off-exhibit collection of neotropical frogs; Prepare diets for and feed the on and off-exhibit iguanas and tortoises; Tend the locust (live food) colony, orb-weaving spiders and

colonies of non-venomous exotic arthropods (wood and hissing roaches, millipedes and walking sticks); Assist in the maintenance of the live food cultures (fruit flies, springtails, crickets, rats, mice); Conduct and record animal observations; Perform special projects as determined by the herpetology staff. **Requirements:** Must be enrolled in an accredited college, pursuing a degree in Biology, Zoology, Animal Behavior, Ecology, Environmental Science or a related field. Must be comfortable working with frogs, lizards, rodents and terrestrial arthropods.

4) Horticulture Intern

Responsibilities: The selected candidate will assist the Aquarium horticulture staff with daily activities. Assist with care of plants in the Rain Forest exhibits; Conduct plant maintenance, fertilization, propagation, and transplantation; Assist in display development; Perform special projects to be determined by the horticulture staff. **Requirements:** Must be enrolled in an accredited college, pursuing a degree in Biology, Ecology, Environmental Science, or a related field.

5) Marine Animal Rescue Program (MARP) Intern

Responsibilities: The selected candidate will aid in all aspects of marine animals rescue program (MARP) operations, which involves the rescue, rehabilitation, and release of stranded marine mammals and sea turtles and implementing outreach efforts of the Aquarium's Ocean Health Initiative. The selected candidate is also responsible for technical and clerical assistance for the Conservation Department staff as necessary. **Duties include:** Animal Care – participating in rescue and release trips, daily feeding, medical treatments, facility maintenance including cleaning and water changes, behavioral observations, and record keeping; Outreach – learning to interpret the MARP artifacts and conservation messages and participation in seasonal outreach and public education programs at the Aquarium and off-site; Other duties as assigned – field work, etc. **Requirements:** Must be college junior or senior majoring in environmental science or related field with course work in biology and ecology. Summer and January terms require 40 hours per week of work for 4 weeks. Spring and fall terms require 8 hours per day, one day per week of work.

6) Marine Mammal Trainer Intern

Responsibilities: The selected candidate is responsible for providing support to the marine mammal training staff. This internship's primary purpose is to teach the intern training theory. *There is limited hands-on animal contact during the internship.* Prepares daily animal diets and dispenses vitamins as instructed; Responsible for the cleanliness and safety of all animal back-up areas; Assists in training, husbandry, and medical sessions; Participates in pre-show and pre-session preparations; Periodically participates in sessions involving swimming during enrichment and play sessions – no animals involved; Other duties as assigned. **Requirements:** Must be college junior or senior majoring in life science or related field. Must have a basic understanding of marine mammal natural history. Must have good swimming skills. Must work well as a team member. Summer and January terms require 40 hours per week of work for 4 weeks. Spring and fall terms require 8 hours per day, one day per week of work.

7) Water Quality Lab Intern

Responsibilities: The selected candidate will assist in the water quality testing of all fish and mammal systems throughout the aquarium. Duties include testing water for salinity, pH, ammonia, nitrite, alkalinity, and copper according to lab procedures, and recoding neat, accurate data. The selected candidate will work closely with the Lab Technicians and the Animal Husbandry staff. **Requirements:** Must be college junior or senior with general biology and chemistry work. Strong math skills and computer proficiency preferred. Must be available to work mornings.

The Mauritian Wildlife Foundation Volunteers - The Mauritian Wildlife Foundation (MWF) is a charitable conservation NGO based in Mauritius working hard to save the endemic fauna and flora of the Mascarenes (Mauritius, Rodrigues and surrounding islets). It is best known for its successes, through partnership with the Durrell Wildlife Conservation Trust's Jersey Zoo, in recovering the Mauritius kestrel from only four birds, the pink pigeon from only a dozen birds and, most recently, the echo parakeet from about 20 birds. Pigeon and parakeet work is intensive and ongoing and new projects are under development for endangered endemic songbirds and reptiles. MWF operates a team of up to 100 or more staff and volunteers working on bird, reptile and plant projects. The MWF is currently seeking new volunteers to work on the pigeon project immediately and other projects (passerines and echo parakeets) in September 2004. Volunteers are accepted for six month stays after which they may be asked to join the team for a longer period, according to requirements and performance. Volunteers are expected to finance their own travel, comprehensive insurance, (including repatriation), and living expenses while in Mauritius (the latter approx £150 per month) but receive free accommodation and access to basic office facilities including fax, telephone and Internet. Work on the pink pigeon project consists of supplementary feeding, predator control and monitoring, data collection on breeding and feeding behaviors of the pigeons and may include capture, handling and ringing experience, disease monitoring and control and radio-telemetry. Volunteers are based in basic, but adequate, field stations for five days each week and have the use of a communal residence during the weekends. Volunteers needed for echo parakeet and passerine breeding seasons (Sept through February) will be based either at our residential house near our captive breeding facility and will be largely involved with hand-rearing, captive management and potentially re-introductions, or at one of the field stations involved with nest monitoring, nest manipulation, release and monitoring of wild populations. Any applicant should be hard working, self-motivated and easy going. They must be able to live in isolated and sometimes claustrophobic conditions while maintaining good humor, tolerance of others and, above all, high standards of work. They must have no concerns about humane predator control and be physically and mentally fit and strong. The successful applicant will experience at first hand, a cutting-edge, conservation initiative, learning all the necessary skills and methods, aimed at saving some of the worlds rarest bird species from extinction. Applicants should send (preferably by email) a letter of application and full CV, including two (2) references, (with contact details including telephone and email) to: David Wills, Pink Pigeon Project Coordinator, Mauritian Wildlife Foundation, Grannum Road, Vacoas, Mauritius; Fax (230) 697 6512; dwills@mwf.intnet.mu<

AAZK Membership Application

check here if renewal []

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Contributing/Canada**

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Mail this application to: AAZK Administrative Offices, 3601 S.W. 29th, Suite 133 Topeka, KS 66614-2054. Make checks/money orders payable to AAZK, Inc. Must be in U. S. FUNDS ONLY. Membership includes a subscription to *Animal Keepers' Forum*. The membership card is good for free admission to many zoos and aquariums in the U.S. and Canada.



**AMERICAN
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of ZOO KEEPERS**

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Professional Animal Care"*

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**Animal Keepers' Forum
30th Anniversary
1974 - 2004**

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ANIMAL KEEPERS' FORUM



The Journal of the American
Association of Zoo Keepers, Inc.

JUNE 2004

ANIMAL KEEPERS' FORUM, 3601 S.W. 29th St., Suite 133, Topeka, KS 66614-2054
Phone: 1-800-242-4519 (U.S.) 1-800-468-1966 (Canada) FAX (785) 273-1980

June 2004
Vol. 31, No. 6

Managing Editor: Susan D. Chan • **Associate Editors:** Kayla Grams, Lovell, WY & Mark de Denus, Reid Park Zoo • **Enrichment Options Coordinators:** Dawn Neptune, Utah's Hogle Zoo & Rachel Cantrell, Disney's Animal Kingdom • **Legislative/Conservation Outlook Column Coordinator:** Georgann B. Johnston, Sacramento, CA. • **ABC's Column Coordinator:** Diana Guerrero, Big Bear Lake, CA • **Reactions Column Coordinator:** William K. Baker, Jr., Little Rock Zoo

Animal Keepers' Forum is published monthly by the American Association of Zoo Keepers, Inc., 3601 S.W. 29th Street, Suite 133, Topeka, KS 6661-2054. Ten dollars of each membership fee goes toward the annual publication costs of Animal Keepers' Forum. Postage paid at Topeka, KS.

AAZK Executive Director: Ed Hansen, AAZK, Inc., Topeka KS
also serves as AAZK Liaison to the American Zoo & Aquarium Association (AZA)

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ADT, EDT and ATD Forms

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Liaison to Webmaster - Denise Wagner

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Jeannette Beranger, Roger Williams Park Zoo

Chair/Coordinator International Assistance

Debbie Richmond, Roger Williams Park Zoo

Project M.A.R.C. (Making A Realistic Contribution)

AAZK PUBLICATIONS - CONTINUING DATA COLLECTION

Biological Information (formerly Biological Values), 4th Edition - Jan Reed-Smith, Columbus Zoo

AAZK Enrichment Notebook 3rd Edition - Lee Houts, Folsom City Zoo

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30th Anniversary
1974 - 2004

About the Cover....

This month's cover features a Black Rhinoceros (*Diceros bicornis*) drawn by Jeff Wells, Animal Keeper in the Ituri Forest at Disney's Animal Kingdom in Lake Buena Vista, FL. The black rhino is the smaller of the two species of African rhinos. It is distinguished from the white rhino by its pointed, prehensile upper lip, which is used as the rhino browses for food. In contrast, the white rhino has a square lip that is used for grazing. The black rhino sports two horns made up of fibrous keratin. The primary, or forward horn can grow to a length of 28 inches (~71cm). The horn of the black rhino is in great demand as a medicine in China, Taiwan, Singapore, and Hong Kong. In North Africa and the Middle East, rhino horns are carved into ornamental dagger handles. The demand for rhino horn is so great that the black rhino has been hunted to near extinction. From an estimated 100,000 in 1960, the black rhino population has dwindled to fewer than 3,500 in the wild today. Once found over most of Africa south of the Sahara Desert, today's surviving black rhinos are found only in small pockets in southern and eastern Africa. A magnificent endangered species, the black rhino is the "flagship" species of AAZK. Efforts to save the black rhino can benefit the conservation of other species and the natural habitat essential for the rhino's survival. You can do your part to help rhinos in the wild by participating in AAZK's Bowling for Rhinos. Thanks, Jeff!

Animal Keepers' Forum publishes original papers and news items of interest to the animal keeping profession. Non-members are welcome to submit articles for consideration. Articles should be typed or hand-printed and double-spaced. Authors are encouraged to submit their manuscripts on a disk as well as in hard copy form. Manuscripts submitted either on disk or electronically as attachments to an email should be submitted in Microsoft WORD. All illustrations, graphs, charts and tables should be clearly marked, in final form and should fit in a page size **no greater than 5.5" x 8.5"** (14cm x 22cm). Literature used should be cited in the text (Brown, 1986) and alphabetically in the final bibliography. Avoid footnotes. Include scientific name (as per ISIS) the first time an animal name is used. Thereafter use common name. Use metric system for weights and measurements (standard equivalents may be noted in parenthesis). Use the continental dating system (day-month-year). Times should be listed as per the 24-hour clock (0800, 1630 hrs. etc.). Glossy black and white **or** color prints (minimum size 3" x 5" [8cm x 14cm]) are accepted. Clearly marked captions should accompany photos. Please list photo credit on back of photo. Photographs may be submitted electronically as either JPEG or TIFF file attachments.

Articles sent to *Animal Keepers' Forum* will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for *AKF*. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the editor. The editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed, appropriately-sized envelope. Telephone, fax or email contributions of late-breaking news or last-minute insertions are accepted as space allows. Phone 1-800-242-4519 (US); 1-800-468-1966 (Canada); FAX (785) 273-1980; email is akfeditor@zk.kscoxmail.com

**Deadline for each regular issue is the 10th of the preceding month.
Dedicated issues may have separate deadline dates and will be noted by the editor.**

Articles printed do not necessarily reflect the opinions of the *AKF* staff or the American Association of Zoo Keepers, Inc. Publication does not indicate endorsement by the Association.

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E-Mail Addresses: You may reach Barbara Manspeaker at AAZK Administrative Offices at: aazkoffice@zk.kscoxmail.com You may reach Susan Chan and *Animal Keepers' Forum* at: akfeditor@zk.kscoxmail.com

AAZK Website Address: www.aazk.org

BFR Website: <http://bfr.aazk.org>

Scoops & Scuttlebutt



Cleveland Chapter and Blue Rhino Show Support of AAZK, Inc.

The AAZK Board of Directors and the Administrative Office staff would like to thank the Greater Cleveland Chapter for their generous donation of \$5000.00 in matching funds which resulted from the Cleveland Challenge #2. The Greater Cleveland Chapter agreed to match donations made to AAZK, Inc. from its Chapters up to the \$5000.00 amount. We sincerely appreciate the amazing generosity of the Greater Cleveland Chapter and its members!

AAZK, Inc. has also received a check for \$5000.00 from Blue Rhino Corporation which represents the first installment of \$20,000.00 that this business has pledged to AAZK, Inc. to support our 2004 Bowling for Rhinos program. The first \$10,000.00 will go to Lewa Wildlife Conservancy and the second \$10,000.00 will go to the International Rhino Foundation for dispersal to the rhino sanctuaries in Indonesia. Our sincere thanks to the great folks at Blue Rhino for their belief in and support of AAZK's Bowling for Rhinos!

Three Positions Open on the AAZK National Enrichment Committee

The AAZK Enrichment Committee is looking for enthusiastic, creative and productive people to fill three open positions on the committee. The AAZK Enrichment Committee works year-round to create workshops for the National Conference. We are currently working to create additions to the AAZK Website/ Enrichment section, translating the Enrichment Notebook into a variety of foreign languages and much more! Your ideas can help drive the future for this committee. Be a Part of Our Vision!

Candidates Must:

Be a Professional Member of AAZK, Inc.

- Be a Full-time employee of a facility housing an animal collection
- Be directly involved in daily animal care.
- Have full institutional support for participation in committee projects and conference attendance is necessary
- Have access to a computer

Desired Qualifications:

- Proven leadership in enrichment-related activities.
- Creative, productive with good follow-through.
- Experience with public speaking and a willingness to participate in open forum discussions at conferences

Closing Date is for applications is 15 July, 2004 If interested, please e-mail a letter of intent and a résumé to:

Amy Burgess, Co-Chair, AAZK Enrichment Committee
Amy.E.Burgess@Disney.com

Or Call for more information:
407-938-2884

Upon receiving the résumé, a Memorandum of Participation outlining the time commitment will be sent to the applicant to be signed by the candidates' supervisors, as a show of institutional support. AAZK National Conference attendance is necessary for participation on this committee.

International Outreach and Marketing Positions Available

AAZK, Inc. is seeking a Steering Committee member for the International Congress on Zookeeping (ICZ). The successful applicant will represent AAZK, Inc. and its International Outreach Committee on the ICZ Steering Committee. Primary responsibilities include working on a diverse, international team of zoo professionals towards the continuing development of the ICZ, including planning and coordination of the Second International Congress of Zookeeping. The representative should attend ICZ steering committee meetings, which may include international travel. Qualifications include strong written and oral communication skills, computer proficiency, and a demonstrated ability to manage projects. Fundraising and conference planning experience is preferred.

The AAZK Marketing Committee is seeking a committee **Chairperson**. The chairperson will work with the Board oversight and committee members in coordinating the Association's marketing and development endeavors. The chairperson will provide written reports to the Board of Directors. The chairperson will facilitate meetings and workshops and present updates to the membership. Qualifications include strong written and oral communication skills, project management and problem solving skills. Experience in fundraising, marketing, or organizational development is desirable.

Job descriptions are available upon request. These are volunteer positions. To apply for either position, please send a cover letter, resumé, and two (2) letters of recommendation to:

Shane Good, Animal Keeper
Cleveland Metroparks Zoo
3900 Wildlife Way
Cleveland, OH 44109
sjg@clevelandmetroparks.com

Deadline for applications is **1 July, 2004.**

Dallas 2004 - "Pursuing Your Wild Passions" - September 26th - 30th

What is Chapter Challenge 2004? In order to keep delegates' cost to a minimum, while ensuring the best possible conference, we are encouraging Chapters to donate. If your Chapter contributes \$250.00 or more to support the 2004 National AAZK Conference, they will be entered into a drawing. The winning AAZK Chapter will receive one full registration and one double occupancy room for five nights at the Adam's Mark Hotel (Sept 26-30, 2004). Letters detailing all the information were sent to all AAZK Chapters in January. Start planning now to meet the challenge!!!



Planning on "Pursuing Your Wild Passions" this September? Just a reminder that deadlines will be here before you know it. For everyone looking for the latest information on this year's conference, please visit our web site www.dallaszoo.com and click on 2004 AAZK conference. This will take you directly to our conference home page. Contact information is also provided if you have any additional questions. We look forward to seeing everyone in September!!!!

Coming Events

AZA Otter SSP® "Otter Keeper Workshop" - 2-4 June 2004. To be held in conjunction with International Otter Colloquium (see next listing). The workshop registration fee is \$50.00 with enrollment limited to 20 participants. Lodging and meals are available at the university for roughly \$65.00 per day (includes three meals). For additional information contact jrsotter@iserv.net or go to the Knoxville Zoo website (www.knoxvillezoo.org) for a registration form.

IX International Otter Colloquium - 4-10 June, 2004 at Frostburg State University, Frostburg, MD. Theme is "Otters: Ambassadors for Aquatic Conservation". For more information go to <http://otter.frostburg.edu>

The Care and Management of Chimpanzee Workshop 18-20 June, 2004. Sponsored by the Chimpanzee SSP® at the Saint Louis Zoo, St. Louis, MO. Three-day course covering all aspects of progressive chimpanzee husbandry. Topics include managing complex social groups, operant conditioning training, social introductions, contraception strategies and enrichment programs. \$65.00 registration includes program materials/lunches. Space is limited. For info contact Steve Ross, Chimpanzee SSP Coordinator at ross@lpzoo.org or by calling (312) 742-7263

Joint Conference of the American Assoc. of Zoo Vets, the Wildlife Disease Assoc. and American Assoc. of Wildlife Vets - 27 August-3 Sept. 2004 in San Diego, CA. For additional info, contact Wilbur Armand, VMD, Executive Director/AAZV at (610) 892-4812 or email AAZV@aol.com

2004 Gorilla Workshop - 25-28 June, 2004 in Calgary, Alberta, Canada. Hosted by the Calgary Zoo. Look for more details and registration information as they become available at their website - www.http://2004gorillaworkshop.tripod.com

28th Annual Meeting of the International Herpetological Symposium - 10-13 June 2004 at Adam's Mark Daytona Beach Resort, Daytona Beach, FL. For further information see www.kingsnake.com/ihs

Association of Avian Veterinarians 25th Annual Expo and Conference - 19-20 August 2004 in New Orleans, LA. Will include paper sessions, master classes, practical labs and workshops dealing with topics related to avian medicine and stewardship. Theme is "Birds and All That Jazz". For more info or to view the entire program visit www.conferenceoffice.com/aav or email aav@conferenceoffice.com, or phone (303) 756-8380

International Zoo Educators (IZE) Conference 2004 4-9 September 2004 at Ocean Park, Hong Kong. For more information visit - <http://www.izea.net>

2004 AZAD Conference - 8-12 September 2004. Hosted by the Philadelphia Zoo. The theme is "Conservation with a Ring". For more info contact Bert DeVries or Mary Murphy at AZAD2004@AZADocents.org

The Aquarium and Zoo Facilities Association (AZFA) - 2-29 September, 2004 in Oklahoma City, OK. Program/registration info: users.rowan.edu/~suyd8758/ or contact Ernie Wilson at

ewilson@okzoo.org, phone ((405) 425-0201 or fax (405) 45-0207.

25th Annual Elephant Managers Association Conference - 14-17 October, 2004 in Tulsa, OK. Hosted by Tulsa Zoo and Living Museum. Pre- and post-trips scheduled to Dickerson Park Zoo and Riddle's Elephant and Wildlife Sanctuary (18 Oct.). For more info email: karendunn@ci.tulsa.ok.us or visit www.elephant-managers.com and/or www.tulsazoo.org

International Marine Animal Trainers Association (IMATA) - October 17-22, 2004 in Kolmarden, Sweden. For more information: <http://www.imata.org> or email Kirstin Anderson at: imata2004@stofanet.dk

Carnivores 2004: Expanding Partnerships in Carnivore Conservation - 14-17 November, 2004. Presented by Defenders of Wildlife in Santa Fe, NM. Features three full days of sessions on terrestrial and marine carnivore issues, plus a poster session, field trip, silent auction, banquet and ambassador wolf sessions. Please visit website at www.carnivoreconference.org or leave a message at (202) 789-2844 ext. 315 for details. Abstracts for papers being accepted until 1 June 2004.

International Elephant Research Symposium - 3-5 December, 2004 in Fort Worth, TX. Presented by the International Elephant Foundation and the Fort Worth Zoo. This important symposium will concentrate on the research and conservation needs of captive and wild populations of elephants. We invite researchers from around the world to present conservation projects and research results on elephant management, health, nutrition, reproduction and behavior. Papers specifically addressing reproduction, calf management and elephant well-being are particularly encouraged. More details to come! Check the IEF and Fort Worth Zoo websites for more information and the call for papers at <http://www.elephantconservation.org> and <http://www.fortworthzoo.org> Abstract deadline: June 1, 2004 Interested persons can also contact Tarren Wagener at elephantsymposium@fortworthzoo.org for additional information.

6th International Aquarium Congress - 5-10 December 2004 in Monterey, CA. Hosted by the Monterey Bay Aquarium. Additional information in English, French and Japanese is available online at <http://www.iac2004.org>

The 7th International Conference on Environmental Enrichment - to be held in August 2005 in New York City, NY, USA. The conference is hosted by the Wildlife Conservation Society (WCS). Watch this page for details as they become available.

PLEASE NOTE: The International Serow Summit: 2nd Symposium on Capricornis and Its Related Species, originally scheduled by the Japan Serow Center for 2004, has been indefinitely postponed. Information will appear here when it becomes available.

Post Your Coming Event Here - email to:
akfeditor@zk.kscsxmail.com

From the Executive Director

As I write this, I have just returned from Houston and the first installment of the Advances in Animal Keeping Course, sponsored jointly by the American Zoo and Aquarium Association and the American Association of Zoo Keepers. This course was "team" taught by representatives of each association and was the culmination of four long years of building the curriculum around areas of interest to the animal keeping professional.



**AMERICAN
ASSOCIATION**
of ZOO KEEPERS

I cannot begin to express my gratitude and appreciation to my fellow teachers for making this course a complete success. I would also like to thank the students who attended this successful launch and their facilities that supported them in furthering their education. To the students who paid their own way, a special thanks for your dedication to the profession.

The course was quickly filled when it was advertised in 2003. Keep your eyes open for the advertisement in 2004. Next years Traveling/Training will be held in Sacramento, CA, again in the spring. There is a waiting list for the course, and although we are working on getting priority spots for AAZK members, it is still first come, first serve. Also, AAZK is proud to award a scholarship for this specific course that provides a \$1000 stipend for attendance. If you are interesting in attending the Advances in Animal Keeping Course, complete the scholarship application and file it by the listed deadline.

Again, thanks to everyone involved with the AZA/AAZK education partnership and to our hosts in Houston, thanks for everything that you did for the Advances in Animal Keeping Course and for the warm hospitality shown all week long.

Ed Hansen, AAZK Executive Director
Tucson, AZ

Chapter Alert

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aazkoffice@zk.kscoxmail.com

Course Review: Advances in Animal Keeping in Zoos and Aquariums

*By Catherine Vine, Bird Keeper
The Philadelphia Zoo, Philadelphia, PA*

I recently returned from the AZA Professional Development Program in Houston, TX, and wanted to share my experiences with the AAZK membership. I participated in the inaugural year of "Advances in Animal Keeping in Zoos and Aquariums." This course focused on topics of concern to all keepers, including nutrition, pest control, capture/restraint, crisis management, and enrichment/training (along with many others). The instructors were from a variety of institutions, both large and small, and held a range of positions at their facilities.

Along with providing detailed information on each of the topics covered, this course gave participants the opportunity to work in small groups on projects related to our field. These included issues such as designing new exhibits, dealing with visitor complaints, planning veterinary procedures, and working through regulations governing international animal shipments. The group projects culminated in presentations on the final day of class, and gave students a chance to hear how other groups had chosen to address their challenges.

This course is the result of a combination of efforts by both AAZK and AZA, with instructors representing both organizations. As a result, the class fostered an understanding of the relationship between keepers and management, and the importance of coordinating efforts among staff members. After learning more about animal health issues, national/international animal regulations, and exhibit design, I realized that there is often a lack of knowledge among keepers about the roles veterinarians, registrars, and curators play. The most important lesson I brought back with me to my institution is an enhanced respect for the rest of the staff with whom I work.

This course would benefit any keeper who wants to expand his/her knowledge of the field and develop the necessary skills to communicate effectively with both animals and people. On a personal note, I would like to thank AAZK for offering a scholarship to attend this course. The support provided by this organization emphasizes the importance of professional development courses designed for keepers. I hope that future participants find the course as useful as those of us who attended this year.

The AAZK – AZA Keeper Course Grant awards \$1,000.00 to the winning applicant to attend the new Keeper Course offered by AZA through their professional school program. Applications are **due by 1 July** of the year prior to the one in which the applicant wishes to attend the Keeper Training course. Thus applications for the 2005 session are due **by 1 July 2004**.

Until the required forms are placed on the AAZK website, they may be obtained by contacting the Grants Committee Chair at: jrsotter@iserv.net, jan.smith@columbuszoo.org or (616) 902-2401; or by contacting the AAZK Administrative Office at 1-800-242-4519 U.S.) or 1-800-468-1966 (Canada).

Legal Loophole Prohibits Prosecution in Baby Gorillas Importation Case

No one can be charged for the fiasco surrounding the import of four baby gorillas by the Taiping Zoo because of shortcomings in the respective legislation that has left the authorities powerless. The good that has emerged from the events, which put the world spotlight on Malaysia after it was discovered that the baby gorillas were captured illegally in the wild, was that the authorities are amending the Protection of Wild Life Act of 1972 to close the loopholes.

The baby gorillas, dubbed "the Taiping Four", were exported to the Taiping Zoo with legal documents but have since been sent to Pretoria in South Africa following international condemnation over the import of the animals.

Department of Wildlife and National Parks law and enforcement director Mislihah Mohd Basir said the law does not require importers to declare whether the animals were captive-bred or snatched from the wild.

"So in the Taiping Zoo case no one can be accused of having made a false declaration," said Mislihah.

An amendment to Section 104 of the Act is being carried out to give the Minister the power to introduce additional regulations for the import of wild gorillas.

AAZK Announces New Members

New Professional Members

Penny Danielewicz and Josephine Noonan, **Buffalo Zoological Gardens (NY)**; Bernie Klepac, **Jacksonville Zoo (FL)**; Robin McKeown, **Palm Beach Zoo at Dreher Park (FL)**; Kristen Arnold, **Disney's Animal Kingdom (FL)**; Jan Stiffler, **Suncoast Primate Sanctuary (FL)**; Alicia Douglas, **Nashville Zoo at Grassmere (TN)**; Aaron Kazmierczak, **Columbus Zoo & Aquarium (OH)**; Cruzanne Lewis, **Lincoln Park Zoo (IL)**; Brad Compton, **Oklahoma City Zoo (OK)**; RoseMarie Gonzales, **Rainforest at Moody Gardens (TX)**; Marcy Artavia and Jamee Ferguson-Lakey, **Sea World San Antonio (TX)**; Rebecca Zwicker, **Cheyenne Mountain Zoo (CO)**; Stacey Belhumeur, **Reid Park Zoo (AZ)**; Mary Powell-McConnell, **Arizona-Sonora Desert Museum (AZ)**; Carrie Graff, **San Diego Wild Animal Park (CA)**; Wendy Enright, **The Living Desert (CA)**; Kendy Thompson, **Wildlife Safari (OR)**; and Elizabeth Seus and Michael Simmons, **Pt. Defiance Zoo & Aquarium (WA)**.

Renewing Contributing Members

Ron Manseau

Detroit Zoo, Royal Oak, MI

Renewing Institutional Members

SPSNQ (Jardin Zoologique du Quebec)
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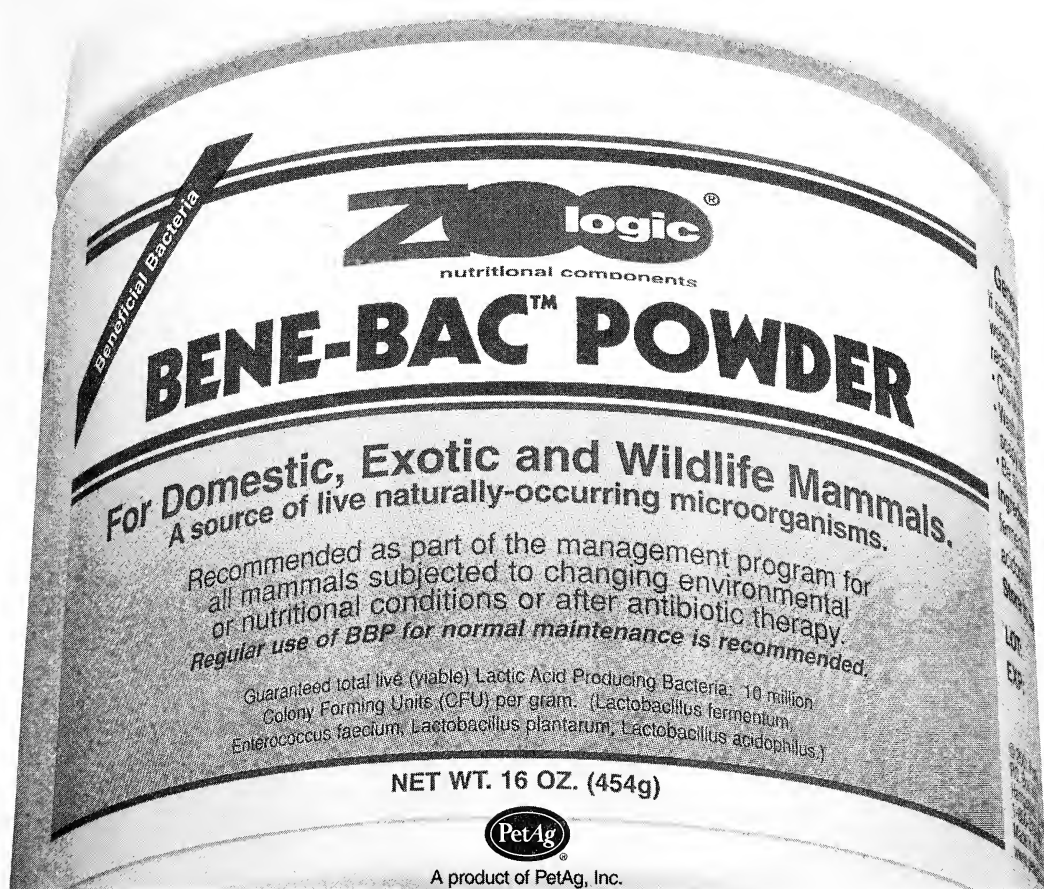
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The Giraffe Puzzle Feeder Study

By Jimmy Johnson, Student
Columbus Zoo & Aquarium School Program
Columbus Zoo & Aquarium, Powell, OH

Most of a giraffe's (*Giraffa camelopardalis*) 25-year life is spent awake and active, only sleeping about 20 minutes per day. Giraffes in the wild spend at least 50% of their time foraging and searching for food. While in captivity, they do not browse as much as they would in the wild, and therefore have much inactive time.

When compared to other animal species, enrichment literature for giraffes is almost nonexistent. This giraffe puzzle feeder simulates the natural giraffe behavior of using their long, prehensile tongues to forage. This is a form of enrichment for the giraffes at the Columbus Zoo and Aquarium. It also allows these intelligent animals to use their minds and resources to perform somewhat natural behaviors.

This project focuses on the encouragement of natural giraffe feeding behaviors. Captive giraffes are normally directly fed, but the puzzle feeder will allow them to perform a more natural behavior as they feed.

We introduced our male giraffe to the puzzle feeder first and allowed him to eat some hay from the feeder. Once he learned that food came from the feeder, we started using fruit instead of hay. The giraffe inserted his long prehensile tongue into the small holes to push the fruit over to the larger hole so it may be extracted. The further we placed the fruit from the larger hole, the more difficult it is to extract it. Once we took sufficient data from the male, we tested the feeder on an adolescent female giraffe.

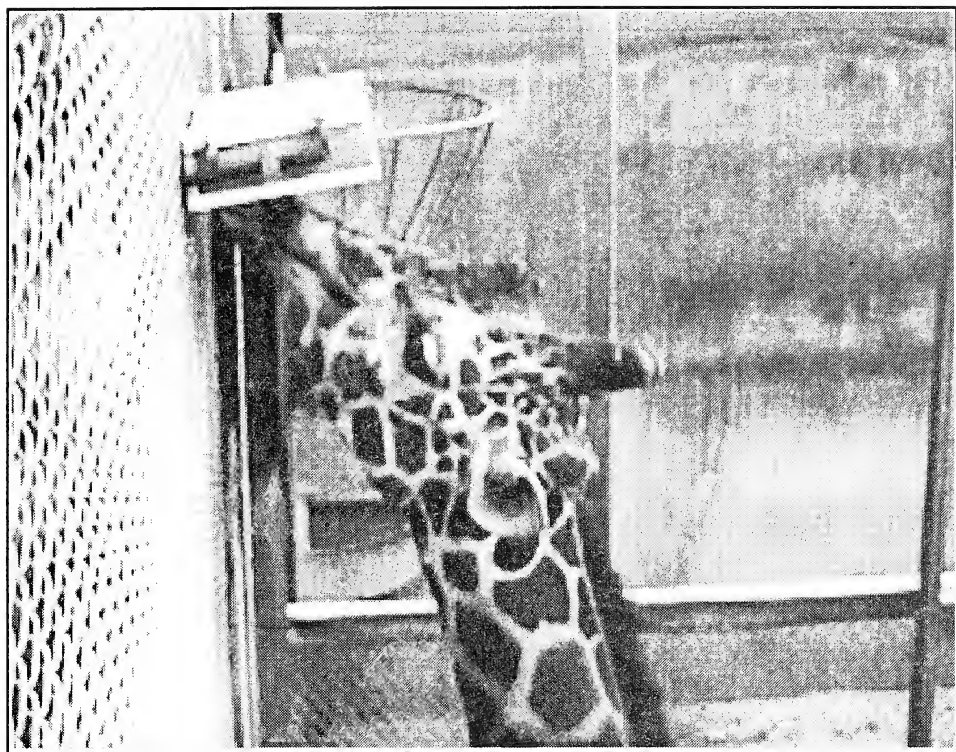
We timed how long it took for the giraffes to extract all of the fruit and recorded those times. The male's times dropped over the course of his study due to the fact that he was becoming proficient at solving the puzzle feeder. Although he did not spend as much time solving the puzzle feeder as the sessions progressed, he was enthusiastic at the beginning of each session. This provided evidence that the feeder did keep the male's attention even though he became more proficient at solving the feeder. However, the times did peak several times, which showed that although he did become proficient at solving the feeder, the time it took him to solve the feeder did increase from one day to the next on several occasions. During one day of sessions, the male showed no interest due to the fact that the females were cycling. The times recorded for the adolescent female did not show any significant incline or decline in the time it took her to solve the feeder.

Her completion times varied in no particular pattern. This could indicate that the feeder was more effective with her than with the male as a form of enrichment because she did not become as proficient at solving the puzzle feeder yet she still maintained interest in the feeder. This is optimal for an enrichment device because the enrichment behavior does not then become learned and it piques the interest of the giraffe providing longer periods of enrichment time.

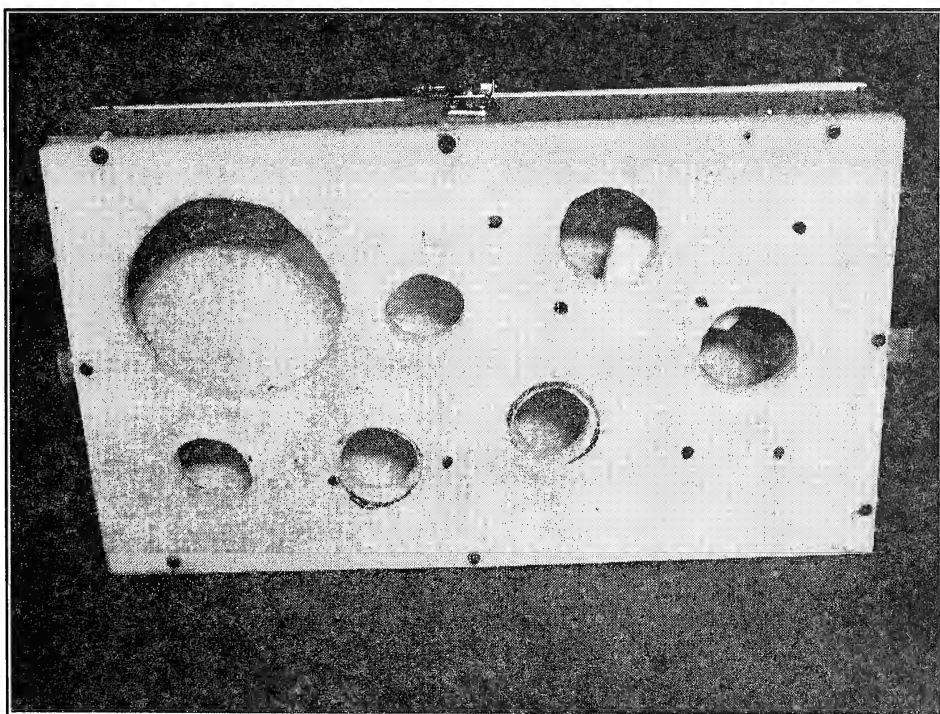
Implications of this study include the elimination of stereotypical or repetitive behaviors and boredom through the use of the puzzle feeder as a form of enrichment. This may result in a better attitude and mood allowing for more positive training sessions and daily maintenance functions. Also, the alleviation of boredom provides a higher, more interesting quality of life for the giraffe allowing it to practice one of its natural behaviors of foraging, through the use of this puzzle feeder.

Acknowledgements

Special thanks to the Columbus Zoo and Aquarium, Troy Mueller, Keeper/Project Coordinator, Pat Currie, Head Keeper of the Herbivore/Carnivore Department, Dan Hunt, Curator, Dr. Mike Barrie, Veterinarian, Dr. Mike Renner, Veterinarian, Dr. Marie Ward, Columbus Zoo and Aquarium School Administrator, and finally Mr. Ron Jones, Columbus Zoo and Aquarium School Instructor/Coordinator.



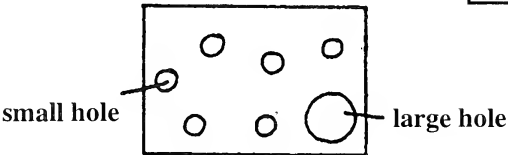
Giraffe utilizing Feeder Puzzle



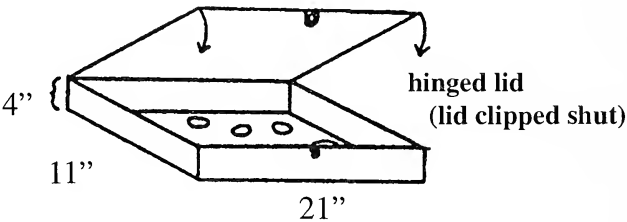
Giraffe Feeder Puzzle requires animal to use it long prehensile tongue to retrieve fruits from the holes.

Bottom View (looking up)

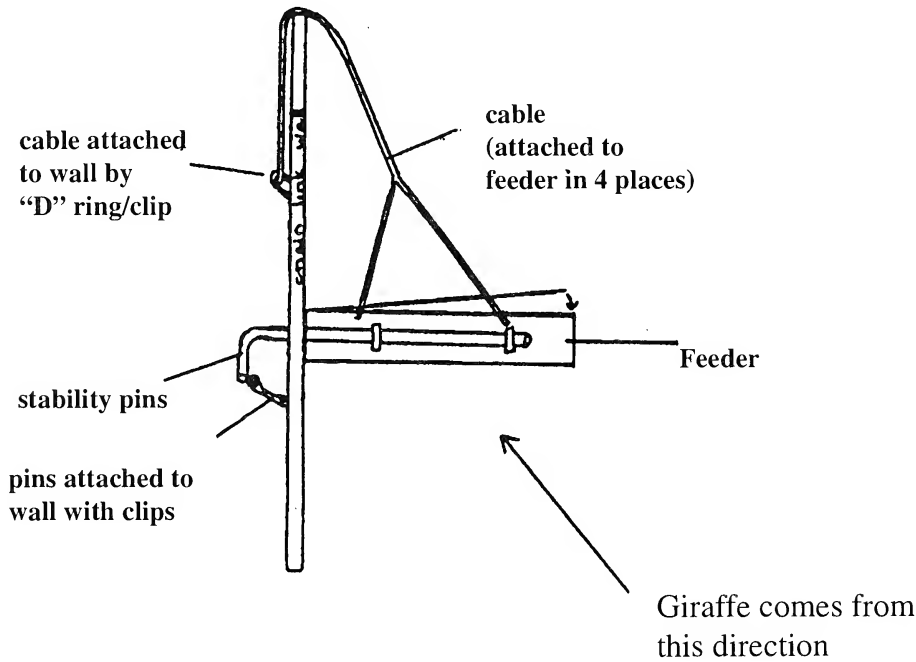
Note: All edges must be filed so the giraffe's tongue is not cut.



3-D View



Side View Wall Attachment





Book Reviews

Acting for Endangered Species: The Statutory Ark

By Shannon C. Petersen

2002 University Press of Kansas, 2501 W. 15th, Lawrence, KS 66049

ISBN 070061172X

Hardcover 240 pgs. \$29.95

*Review by Brett Bannor, Keeper
Zoo Atlanta, Atlanta, GA*

Oh, no, I thought as I began reading Shannon Petersen's book, he uses that annoying "c phrase" a lot and even has it in the title of a chapter. You know the phrase: charismatic megafauna. Stylist E. B. White observed that when writing, one should prefer the standard to the offbeat; why do so many insist on bleating out "charismatic megafauna" instead of simply saying "large, popular animals" or "familiar mammals and birds"?

Luckily, my apprehension was soon quelled by the thoroughness of Petersen's research and the clarity with which he conveys it to the reader. *Acting for Endangered Species* is a rigorous examination of the 1973 Endangered Species Act (ESA). It is not a zoologically based tome of the methods and procedures of wildlife conservation, but rather a consideration of the legal theory and principles surrounding Congressional adoption of the ESA and subsequent adjudication of the Act by the courts.

Despite its legal slant, one need not be an attorney—as the author is—to understand the book; certainly animal care professionals will not find the text difficult. In fact, one would no doubt find it more enlightening to pour through Peterson's work than the Endangered Species Act itself. (Another book I have seen reprints the ESA in its entirety; this requires over 40 pages and makes for very dry reading].

Petersen made the helpful and enlightened decision to begin his discourse with a short chapter on the history of wildlife conservation in the United States prior to the ESA. It was surprising to me, and certainly shocking, to learn that President Ulysses Grant refused to sign an 1872 bill to protect American bison, apparently because he agreed with those who argued that the extinction of the bison was potentially a blessing, as it would probably hasten the likewise destruction of the Plains Indians. It is fortunate for Reconstruction that Grant was not so uncharitable to Lee at Appomattox.

Petersen follows this historical background with a chapter explicating the early 1970s Congressional debates surrounding the passage of the ESA. This is where he writes "charismatic megafauna" repeatedly. The thrust of this chapter, and indeed a key theme of the entire work, is that virtually everyone, from members of Congress to newspaper editorialists supporting the Act, framed their arguments on behalf of animals such as wolves, grizzly bears, bald eagles, and alligators—in other words, large, popular animals. (See how less pretentious that sounds than if I'd used the "c phrase"?)

Although the ESA applies to all animals—as well as to plants—in 1973 neither legislators nor reporters mentioned mollusks, insects, or non-game fish. Petersen argues persuasively that it was this relatively narrow focus of the debate, and a dearth of foresight into the ESA's potentially broad scope, that led

to overwhelming bipartisan support for the Act. It cleared the House of Representatives by a 345 to 4 vote, passed in the Senate unanimously, and was promptly signed by President Nixon.

Such strong initial backing for the ESA by both the legislative and the executive branches underlies another theme of *Acting for Endangered Species*, namely that the sections of the Act which later provided the most controversy were scarcely discussed in 1973. One such portion of the ESA was Section 7, the "Interagency Cooperation" provision. By the terms of this section, federal agencies were required to consult with the Fish and Wildlife Service—or its marine counterpart, the National Marine Fisheries Service—before undertaking any action that could place a federally listed species in peril.

The Tennessee Valley Authority (TVA) was just such a federal agency. And the snail darter, a tiny fish, was just such a listed species; it was an animal whose existence was threatened by a TVA project that would destroy its habitat. During the construction of the Tellico Dam, fish and feds collided, leading to the landmark 1978 case of *TVA v. Hill*, decided by the U.S. Supreme Court. Petersen's coverage of the background of the case, the litigation itself, and the aftermath of the Court's decision, is perhaps the strongest part of the book.

In brief, the Court ruled in favor of the snail darter, which halted construction of the dam, but only temporarily. Under the leadership of Tennessee Senator Howard Baker, influential members of Congress used a sly means of circumventing the decision, and the dam was ultimately built. Fortunately, snail darters by this time had been translocated to other nearby streams, plus additional populations of the fish had been discovered. Thus, the darter did not go extinct despite the dam's completion.

No less comprehensive is Petersen's narrative of the spotted owl controversy. It is in the chapters on this logging versus conservation conflict in the Pacific Northwest that the author most cogently makes the point that the initial almost universal support of the ESA had, by the 1990s, eroded considerably, which meant that appropriations for the Act and its continued renewal faced an ever stronger organized opposition.

Yet if the breadth of the forces against the ESA is noteworthy, so too is the diversity of the organizations that have been foremost in its support. In this regard, Petersen deftly introduces us to a wide cast of characters. He remarks, for instance, that the snail darter had in its corner the Cherokee Indians, who opposed the Tellico Dam because it would inundate sacred tribal sites. In a similar vein, Petersen notes the support the ESA received in the late 1990s by the Evangelical Environmental Network (EEN), a group of Christians who endorsed the Act as consistent with biblical teachings. Indeed, the EEN charmingly called the story of Noah in Genesis "the first endangered species act proclaimed in written history."

I mentioned that Shannon Petersen is a lawyer, not a scientist. Certainly it is partly for this reason that he makes a few small zoological mistakes here and there. For example, on page 33, referring to the maned wolf, he puts maned in quotation marks, as though it is not the actual species name but some form of colloquial descriptive term. Plus there are a couple of typographical errors that escaped the editor's notice. On page 115, a United States Supreme Court ruling is described as a "7 to 3 decision," a mathematical impossibility since there are but nine justices on the high court.

These are, however, minor objections. Given how much I learned from *Acting for Endangered Species*, I shall even forgive counselor Petersen for using the phrase charismatic megafauna. Just this once.



REACTIONS

A Question and Answer Forum for the Zoo Professional on Crisis Management

By William K. Baker, Jr., Curator
Little Rock Zoo, Little Rock, AR

Question

What are your thoughts on the growing reports of problems with exotic animals in private hands?

Comments

I recently had someone ask this question of me in person and before I answered, I took a deep breath and composed my thoughts. This is because this issue strikes to the heart of both my professional and personal feelings about exotic animal management. For me, this may very well be the hardest column that I have ever written.

The immediate response that this subject matter draws from many zoological and wildlife professionals are that exotic animals shouldn't be in private hands, period. Sounds like an easy solution to the problem, doesn't it? It isn't. The nature of exotics in private hands is complex and impacts so many levels of our professional lives it almost defies description. Historically, there have been exotics in private hands for many years. The numbers were never truly significant and there were isolated clubs dedicated to certain species, especially the smaller felids. Large cats in private hands were actually the exception to the rule. Many states regulated exotics, while others had no regulations on their books and the Federal agencies regulate those facilities that choose to be licensed in order to conduct business.

Approximately 20 years ago when I first entered the wildlife field, there was a dramatic increase in the numbers of exotics in private hands. Animals were moving into the public realm through auctions and breeders. In some states, this problem was more prevalent than in others. Why this occurred is a source of much discussion when I sit down to dinner with my peers and would fill several columns. The point is that the general public had ready access to exotic animals. Conversely, as the numbers increased, so too over time has the number of incidents where people have been injured. No surprises there, just straight statistics that can be found through data collection on the Internet, listserves, or on certain websites that track incidents.

This is where the situation starts getting complex. In the states that have regulations, recourse is possible. Facilities that are licensed by the USDA are subject to the Animal Welfare Act. In the states that lacked regulations the problem proliferated. And as animal incidents have occurred, law enforcement agencies are often called in to address human injuries, animal escapes, and attractive nuisance situations. Needless to say, civil action is often a component of this as well. The obvious answer for authorities is to contact their local zoo and ask them to take an animal or in many cases the owner contacts the zoo directly when it becomes clear that they have taken on a responsibility

that exceeds their abilities. How often does this occur? When I worked at a zoo in Texas, on a busy week we averaged up to 20 calls. Now multiply those figures by the total number of zoological and wildlife facilities in the United States and the scope becomes clear. The problem for AZA facilities is that we have limited holding space and the vast majority of these animals are not genetically viable for conservation efforts. Usually, little or nothing is known of their bloodlines due to indiscriminate breeding and the animal numbers also exceed the carrying capacity of zoological institutions. Limited space, resources, and staffing are a common theme in today's zoological institutions. Conservation efforts must come first.

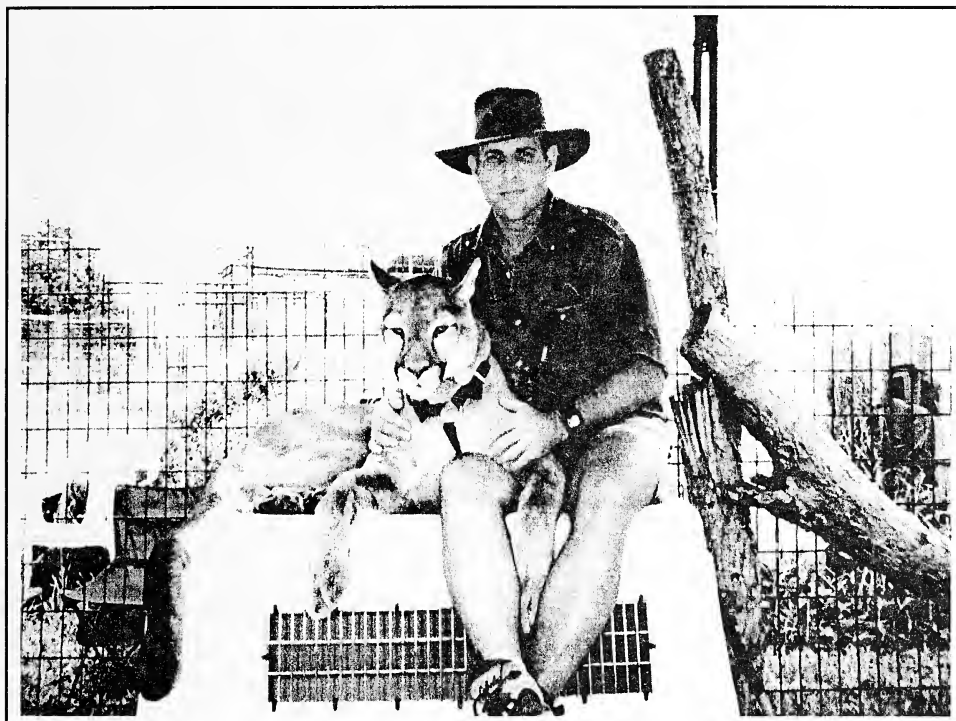
The next step for someone trying to place an exotic is to locate and call a wildlife refuge. However, most refuges are non-profits and classified as 501(c)'s. Translation, refuges live off of charitable donations and can only build new exhibits and holding areas as their budget and staffing permits. Over the years I have worked with numerous refuges and I can safely say that the people who work at refuges are some of the most determined and dedicated individuals that I have known. I have watched zoologists and interns work by floodlights and truck headlights building new exhibits at 9:00 at night to provide more space for their animals. To say I have been impressed would be an understatement. The problem is that refuges cannot build in proportion to the number of animals that are being produced in the private sector. They simply can't keep pace. The result is that at times temporary overcrowding occurs, cats are taken when the refuges resources are less than optimal, or the alternative is that animals are turned away to an uncertain fate at best. Having been on exotic rescues it's all you can do to be professional and contain your emotions. Heart-wrenching is the only phrase that I can apply. All of which can test the resolve of any animal professional.

At some point, the issue is raised to regulate exotics in private hands. Actually, not a bad idea at all. But where those lines are drawn often becomes political in nature as different factions or lobbyists advance their own agendas. At times, laws are drafted that make little sense and are difficult at best to enforce. Another perspective is to regulate the breeders and go after the source. Once again the issue of where the lines are drawn is problematic, because there are a few private facilities that are of an extremely high quality, often supplying zoological facilities with animals and actively participating in legitimate conservation efforts. Sometimes it's easy to forget that there are facilities that are USDA licensed, often AZA accredited, and are privately owned. What separates them from other facilities is their credibility, ethics, and professionalism. So, the question remains, "What should we do to insure animal welfare and public safety when it comes to privately held exotics?" My professional opinion on this is that ownership should be limited in the private sector to zoological, research, and wildlife-oriented entities and individuals. They should be USDA licensed and maintain trained degreed zoological professionals on their staff. The uninformed and untrained shouldn't have access to exotic animals, period. Ideally, there should be a mandatory licensing process that regulates all exotic animals that are held outside of zoological facilities and wildlife refuges.

If it seems that I have something of a personal slant on all of this, I do. When I was a zoo curator in Texas, I received a phone call from a vet clinic in West Texas with a placement request for a 1.0 cougar (*Felis concolor ssp.*) kitten that had been abandoned at their clinic by a private owner. They had contacted me as a last chance to see if either my facility or I would take it before it was euthanized. They had made every attempt to place it with a zoo or refuge, but they were all filled to capacity. My wife (also a zoologist) and I took him at six weeks of age and hand-raised him under my USDA Class C and Class R licenses.

For the past four years "Phoenix" has been a fixture in my life. He is currently in training through a combination of free-contact and operant conditioning techniques with the ultimate goal of using him as a Cat Ambassador to educate the public and regulatory agencies on why exotic animals do not make good pets, and for the development of crisis protocols. I also volunteer my time to work with the Sanctuary Standards of Care and Operation project, a coalition effort to assist refuges nationwide. If it sounds like "Phoenix" has changed my professional and personal life, he has. When I look in his eyes, I know that I have made a tangible difference in his quality of life and what

he has given in return is beyond measure. In every sense of the word, it is pure. It's the type of symbiotic training relationship that has evolved into something more. Never is it lost on me that he is a wild animal and that I have financial and husbandry responsibilities associated with his daily care at a nearby wildlife refuge. But, I have no regrets, only hope for the future. In closing, I encourage all professionals to support wildlife refuges. Every dollar sent helps them to help the animals.

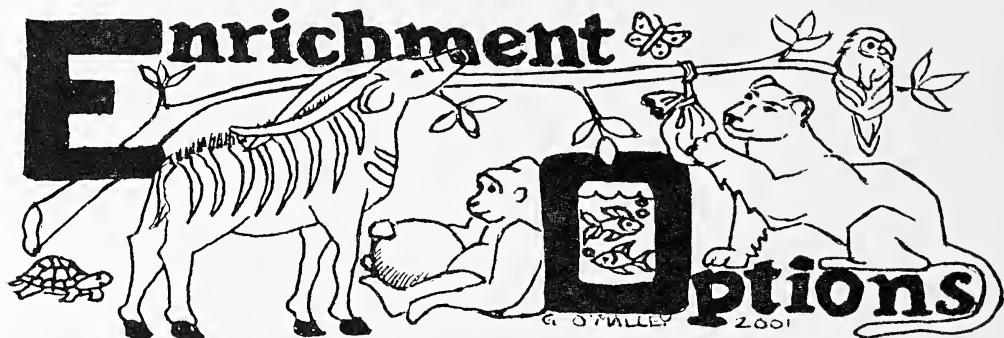


Bill Baker and 1.0 cougar Phoenix

Next Month: What do you recommend for primary and secondary fencing?

**If you would like to submit a question for this column or have comments on previously published materials, please send them to AAZK, Inc., 3601 S.W. 29th St., Suite 133, Topeka, KS 66614
Attn: Reactions/AKF**

(About the Author: Since 1985 Bill has been active in the fields of science, zoology, and wildlife management. His education and experience include a B.S. in wildlife management and post-graduate studies in zoology, Lab and Museum Assistant, Shoot Team Leader, ERT Member, Large Mammal Keeper, Senior Keeper, and Zoo Curator at various zoological facilities. His area of research is crisis management in zoological institutions, which draws upon practical experience and training as a Rescue Diver, Hunter Safety Instructor, NRA Firearms Instructor, and Red Cross CPR/First Aid Instructor.)



EO Editors - Dawn Neptune, Utah's Hogle Zoo
and Rachel Cantrell, Disney's Animal Kingdom

EFFECTS OF FEEDING ENRICHMENT ON SLOTH BEARS *Melursus ursinus*

By Brij Kishor Gupta, A. K. Sinha and Sant Prakash

Department of Zoology/Faculty of Science

Dayalbagh Educational Institute, Dayalbagh, Agra 282 005, India

Email: brijkishor68@yahoo.com or sant_prakash@rediffmail.com

Environmental enrichment aims at stimulating a wide range of species-specific behaviors, which are performed in normal sequences and frequencies. The use of environmental enrichment simultaneously reduces the stereotypic behaviors in captive animals.

With the increasing role of zoos in conservation, developing methods of animal husbandry that enhance the animal's well-being is of particular importance. Environmental enrichment is therefore a vital part of captive facilities and is aimed at enhancing the behavioral repertoire of captive animals, so that it more closely resembles behavior in the wild. In addition, environmental/behavioral enrichment may be undertaken as remedial or preventative action, for example to reduce aggression or stereotyped behavior.

Not many studies have been conducted on *Melursus ursinus* environmental enrichment. In order to provide opportunities to exhibit species-appropriate behaviors or otherwise enable animals to work for food, a number of enrichment techniques were utilized such as offering food in a manner that necessitates exploratory or manipulative behavior or by feeding on an unpredictable schedule.

Overall enrichment is an effective method of enhancing the well being of zoo animals where a common approach is being used to enrich the environment of captive animals. In the present case study, we introduced various feeding methods which encourage exploratory or manipulative behavior and which stimulated natural feeding behaviors, thus keeping the animal occupied.

For this study, three groups of rescued dancing sloth bears at the Agra Bear Rescue Facility were given a feeding program in which food was offered in vessels as well as scattered. The study aimed to investigate whether feeding the bears by way of scattered food would increase their general levels of activity and decrease the levels of aggression and stereotype behavior.

Methods

The three enclosures are separated by a welded mesh of 1.25 meter high (~4ft) mounted over a wall of 0.5 meter high (1.64ft.). The welded mesh also has six power fence lines with an overhang. The bears were fed three times daily. Their food consisted of fruits, vegetables, boiled eggs, yogurt, ground nuts, wheat cereal, pasteurized milk, baked bread (made of wheat, gram flour) and bottled

honey. The enrichment initiative involved scattering the food in the enclosure, on tree stumps and two terrestrial (baseline) feeders. For the baseline feed method, feeding vessels were conventionally used. The vessels measured 15" in diameter (~38cm). The vessels served quite well as a means of providing milk and semi-liquid food.

Data Collection

Observations were carried out for all three enclosures during January 2003 to May 2003 under each feeding condition. Identification of the individual bears was attempted in the beginning by their physical characteristics, and later a microchip was implanted subcutaneously. Individual as well as group behavior was of primary interest. Furthermore, many observations were made at different hours of the day. General behavior was observed in four 30-minute sessions each day between 0900 hrs to 1800 hrs. Scan sampling at 30 seconds intervals was used (Martin and Nateson, 1993). Behavior was recorded as shown in Table 1. In addition location was recorded as terrestrial and scattering. Analyses of these behaviors were subsequently arranged into categories (Table 1).

Table 1. Behavior categories recorded during January 2003 to May 2003 in rescued dancing bears at Agra Bear Rescue Facility.

Category	Behavior	Description
Active	Locomotion	Walking, running, climbing
	Foraging	Searching for feed
Inactive	Feeding	Feeding on provided feed
	Resting	Sleeping, resting, stationary, lying
Affiliative	Playing	Playing
	Scratching	Rubbing body
	Paw sucking	
Agonistic	Intraspecific Chasing	Aggression between bears
Abnormal	Stereotypic	Pacing
		Head winging
		Waving
Miscellaneous	Vocalization	Humming (bee) sound
		Loud call (while fighting)

Data Analysis

The data analysis was organized into a frequency table. The total counts of observed behaviors under the two conditions were then combined to yield the total count per category. These frequencies were used to plot a histogram. For statistics analysis X² tests were applied (Fowler, 1990). Probability of ≤ 0.05 was considered significant.

Results

Behavior patterns

The scattering offeed method had a positive effect on activity in that all three groups of sloth bears They were more active and showed more active behavior on experimental days. However, results concerning stereotypic and aggression behaviors differed between the individuals.

The sloth bears were significantly more active on days when they were fed with terrestrial scattering and fed on stumps. That is, they spent 40% more time moving about foraging and feeding as opposed to resting. Incidence of stereotypic behavior was significantly less frequent on experimental days than on terrestrial baseline feeding days. Furthermore, the bears spent more time climbing the wooden platforms and logs placed inside the enclosure and significantly more time climbing trees on days when fed scattered (i.e. a larger portion of the sum of behaviors observed - active, inactive, agonistic or affiliative - occurred on trees).

The distribution of feed at different places and providing feed in individual vessels also had a generally positive effect in reducing aggression at feeding time.

Discussion /Conclusion

Active behavior such as locomotion, foraging and feeding was observed more often with scattered feeding. Aggression and stereotypic interaction occurred less frequently. Increase in general activity and decrease in aggressive and stereotypic behavior can both be considered positive effects of changing the feeding regime.

The bears were fed fruits and vegetables like grapes, chiku, bananas, apple, watermelon and spinach during the scatter feeds. Carrots were the preferred item, and the young bears rushed to get them.

Milk and boiled wheat daliya were fed in the vessels. Each bear had their own vessel, and each vessel was placed far from the others. The older and sub adult bears would eat their food first and then move on to the younger animals' vessels to eat their food. Scattering the feed did not solve this problem of "food stealing". The bears simply ran around the enclosures chasing away young bears from the available food.

In casual observations during the study, a few bears were seen not eating but also protecting their feed. However, after the feed was finished, they tended to show behavior that indicated they would like to have more feed.

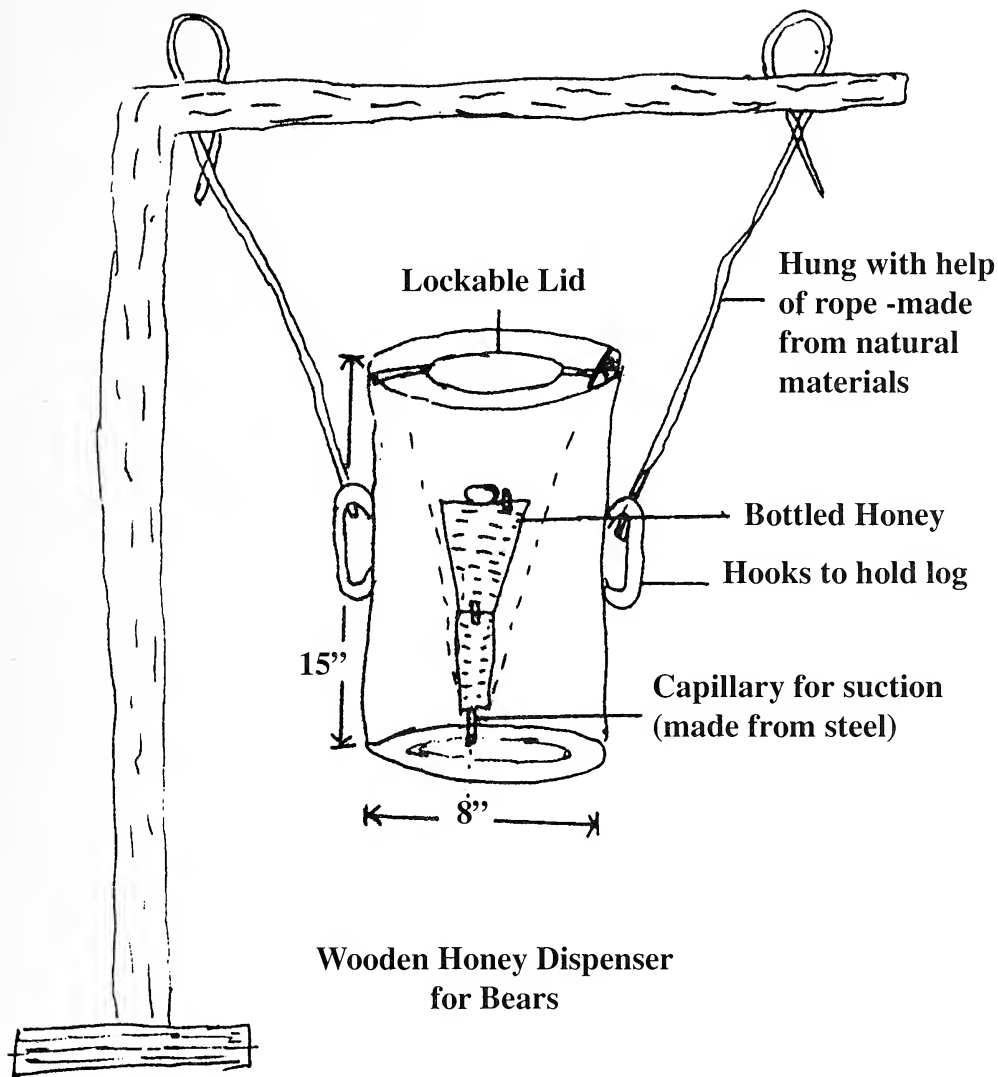
It should also be mentioned that a new method of feeding was introduced - feeding with a honey dispenser. In general, it took a bear 10-15 minutes to discover the honey dispenser placed in the logs, in an enclosure of a size of 60 m x 70 m. Once discovered, the young bears came first to the dispenser and spent an average of 25-40 minutes sucking the honey. Most of the bears were attracted (80% of bears housed in the enclosure; 14 nos. of bears) to the dispenser, and each was curious to suck the honey. A few times, bears showed agonistic behavior while other bears tried to get closer to the honey dispenser. It appeared that at times, more than one honey dispenser should be present in order to cater to the demand of the bears. Once the bears had finished the honey feeding, the bears often re-checked the feeders for leftovers. This was precisely the desired effect - that feeding enrichment would increase activity.

Acknowledgements

We would like to thank the Geeta Seshamani, Secretary and Kartick Satyanarayan, Chairman of Wildlife S.O.S @, Agra Bear Rescue Facility for providing the necessary infrastructure for the above study. We would like to thank P. R. Sinha, Member Secretary, Central Zoo Authority (Ministry of Environment & Forests, Govt. of India), New Delhi, Sanjeev Kumar, IFS, Deputy Conservator of Forests, National Chambal Sanctuary Project, Agra and Diwakar Vasistha, Range Forest Officer, Soor Sarovar Bird Sanctuary, Keetham who rendered all help in conducting this study successfully. Thanks are also due to many animal keepers who helped during the data collection during the study.

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(Ideas appearing in this column have not necessarily been tested by the editors for safety considerations. Always think ahead and use good judgement when trying new ideas. You are invited to submit materials for the Enrichment Options Column. This might include recipes, toys, puzzle feeders, olfactory enrichment ideas, etc. Drawings and photos of enrichment are encouraged. Send to: AKF/Enrichment, 3601 S.W. 29th St., Suite 133, Topeka, KS 66614-2054. Eds.)

Chapter News Notes

Palm Beach AAZK Chapter

The newly elected officers for 2004 are:

President..... Sean Mallee

Vice President.....Mark McDonough

Secretary.....Staci Brown

Treasurer.....Robin McKeown

The Chapter is working diligently to organize this year's Bowling for Rhinos to be held at the end of this month. We are collaborating with the Lion Country Safari Chapter to add to the success of this event. Hopefully we can meet or exceed last year's money raised to benefit rhino conservation.



We have also planned to volunteer with Adopt-A-Spot as part of a local environmental clean-up project. Through our participation we can increase awareness of our Chapter's name and serve the community.

In addition, our Chapter has started a photo contest to obtain zoo animal pictures for an upcoming calendar fund raiser. We are looking forward to an eventful upcoming year!

*--Sean Mallee, President
Palm Beach AAZK Chapter*

Cape May County Zoo AAZK

As our first year comes to a conclusion, we reflect back on a year of growth. Members have been hard at work establishing an honorary membership for patrons to join our local Chapter as well as publishing our first quarterly newsletter to send to our new friends as part of their sponsorship dues.



One significant fundraising endeavor has been to partner with the Green Fund Network in a used printer and toner recycling program. We received our first check in the amount of \$58 but more importantly, we have gained local recognition as a Chapter. Many local businesses are supporting us in adopting this important environmental cause.

CMCZ AAZK members have been present in the community by recently participating in a Kids Expo at the Cape May Convention Center and by sponsoring a booth at the annual Earth Day Festival in the County Park on Saturday, 17 April. The Chapter raised nearly \$1000 in proceeds by selling home-made dog biscuits packaged with laminated photos of some of our Zoo animals and by selling plants grown by park employees, Daisy Bodnar and Frank Shields. The Little Egg Harbor Soap Company also participated in the event, selling home-made soap and donating over \$400 in profits to our Chapter.

Other fundraising activities are planned for the near future including participating in a summer farm market in cooperation with Rutgers College and by hosting a booth at the local 4-H Fair and the Mosquito Commission.

*--Dianna Schemel
Communications*

Now Available - New AAZK Logo Pins & Patches



shown actual size



enlarged to show detail

The new AAZK logo design (by Amy Burgess of Disney's Animal Kingdom) is now featured on both a patch and enameled pin. The colors are tan, rust, burgundy, grey, blue with a black border. Patches (4" x 3") cost \$8.00 each. The pins (3/4") cost \$6.00 each. Prices include domestic and Canadian shipping. This price covers postage for one pin or one patch to overseas addresses. For overseas orders of from 2-6 patches or pins, you **must** add \$2.00 additional for shipping.

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A Review. **Biological Information on Selected Mammal Species, 4th Edition CDROM**

*Review by Norah Farnham, Keeper
Woodland Park Zoo, Seattle, WA*

As noted in the CD introduction, this edition, which is available as an Adobe PDF file, is an update and complete revision of previous editions. The first three editions, published in 1982, 1985, and 1987 were called 'Biological Values of Selected Mammals', and included such physiological information as heart rate, etc. Such data is not included in this version since the editors feel that information is so readily available online through ISIS. (International Species Inventory System)

In order to get a well-rounded perspective of the CD, and to get an idea of how useful/ user-friendly it may be to non-zookeepers, I enlisted input from 3 additional colleagues at Woodland Park Zoo who would likely have use for such a resource: Jonathan Dally, Public Programs Coordinator, writes fact sheets that serve as reference for staff and volunteers as well as for visitors to the zoo or its website. Jenny Mears is a Programs Specialist who compiles animal information packets for teacher training workshops and tours. Ali Redman is a WPZ research assistant and volunteer keeper aide in the Asian Bear and Asian Forest units. This review is a compilation of comments from all four users.

The information included in the CD is fantastic. Even though it may be sparse in some areas, this is presumably because that particular information is unknown/ unavailable for that species. It is, after all, according to the editors, designed to be a "thumbnail sketch of the natural history of a species". The data that is included, however, provides a great deal of information in a clear, concise format. You can find the local name of an animal, as well as its U.S. common name. Status in the wild is included, along with current and historical geographic ranges, and habitat. There are detailed size ranges for males and females. The age of sexual maturity, interbirth interval and gestation are listed, along with what the young are called, number of young, and their condition at birth. (i.e. altricial v. precocial; natal coloration, etc.) In addition you can find life expectancy, social structure, dental formula, diet, and unique behaviors. All this in a thumbnail!

The bookmark feature is extremely convenient. All orders are listed, and double clicking on any order will expand down to families and species, and simultaneously take you directly to the corresponding information page.

The Appendices provide a wealth of information, including a full outline of CITES, IUCN categories, pictures and text of the 25 Top Primates in Peril, Taxa lists of Living Lemurs, Neotropical and African Primates, and much more.

The final section, References, provides an exhaustive list for further research, including links for many pertinent websites.

One difficulty we encountered was the inability to quickly locate a species if you do not know its order. While this may not present a problem for most keepers, users without a strong knowledge of taxonomy may find it frustrating. An additional column in the Table of Contents that lists 'Order' next to the common and/or scientific name would make navigation simpler. It would also be nice to be able to click on the common or scientific name in the Table of Contents and link directly to the associated content page.

Technically there is inconsistency in the default scale factor between documents. For example, the pages in some orders default to a scale of 71% while others are set at 125%, and the Appendices have a default setting of 150%. This is a minor annoyance that only marginally detracts from the usability.

Overall, it is obvious that a great deal of research and hard work went into this CD project. It is definitely a very useful reference tool for zookeepers, as well as for students and various zoo professionals. Congratulations and thank you to the entire team for providing this wonderful resource!

My thanks also go to my Woodland Park Zoo colleagues who took time to evaluate the disk. I feel their input was invaluable to the overall review of the material, and I appreciate it.

Just Released.....

Biological Information on Selected Mammals 4th Edition

CDROM Version

A product of the American Association of Zoo Keepers, Inc.

The 1,396 page *Biological Information on Selected Mammal Species* CD covers a wide range from general, breeding, and young-rearing behavior to diet and physical descriptions of 590 species. The volume is in a PDF format allowing searches by Species (Common or Latin name); or Key words using the *Find* function; or by Species (Common or Latin name), Family; or Order using the *Bookmarks*. Table of Contents are given for Orders, Families, Species by Common Name, Species by Scientific Name, and Species by Order and Family. The Appendices cover a variety of information from behavioral patterns common to families (Bovoid displays) to taxonomy (Primates). References are listed by Order and Family.

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Just Released.....

AAZK Enrichment Notebook, Third Edition CDROM Version

A product of the American Association of Zoo Keepers, Inc.

This 460-page publication includes many facets of animal enrichment and is indexed for easy reference. The sections include an Overview of Enrichment, Enrichment Links, Enrichment Suppliers, Suggested Guidelines (Bats, Bears, Birds, Carnivores, Fishes, Primates, Reptiles, and Ungulates), Safety Considerations, Lists of Browse Plants and Toxic Plants, Cookbook Recipes for Enrichment, Enrichment Ideas/Devices (organized by category), Sample Enrichment Forms currently used in zoological facilities, and an extensive Enrichment Bibliography. This is a searchable (by common or scientific name) PDF format document utilizing Acrobat Reader which is included.

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West Michigan AAZK Chapter

The logo below was adopted by the West Michigan AAZK Chapter (John Ball Zoo, Grand Rapids, MI) in June of 2003. The design was a collaborative effort utilizing otters originally drawn by Brian Ballazd (1992) for the former River City Chapter logo. That Chapter was formerly located at John Ball Zoo and dissolved some time ago.



The John Ball Zoo has otters in their collection and in the logo the otters are shown encircling the Grand Rapids area of the state of Michigan.

--Julie Katt, Secretary/Treasurer

CHAPTER LOGOS

Does your Chapter have a new logo? Please keep us up-to-date if you change your Chapter logo. Also, new Chapters are encouraged to send in a copy of their logo as soon as they adopt one. Logos may also be sent as graphic file attachments (tiff or jpeg) to the email address listed below.

We will be producing another Chapter Logo Registry in 2005, so make certain the logo in our file is your most current one. When sending in logos, please include name of the artist/designer, date logo was adopted, and what, if any, significance is in the design - animals represented, etc.

What's your AAZK Chapter been up to? Send your Chapter News to the Editor at:
akfeditor@zk.kscoxml.com

MOVING?

Please let us know when you change your address! It now costs AAZK about \$1.00 every time an AKF is returned because of an incorrect address. We have more important things to spend the Association's money on! Please call 1-800-242-4519 (U.S.) or 1-800-468-1966 (Canada). If you should get the answering machine, please speak slowly and clearly when giving your address change. Or you may email your address changes to: aazkoffice@zk.kscoxml.com

THANKS !

Training Terminology—Part 4

Stimuli and Reinforcement

*By Beth Stark, Chair
Animal Behavior Management Committee*

In the last installment, we touched on the concept of reinforcers. A reinforcer is anything that occurs in conjunction with a behavior that tends to increase the likelihood that the behavior will occur again. This month we progress the discussion of reinforcers to methods of providing reinforcement. However, while the reinforcer influences the behavior in the future, each behavior is preceded by a stimulus. Thus the repertoire for a typical behavioral includes the stimulus followed by the behavior, which is then followed by the reinforcer.

Stimulus – Anything that elicits a physiological or behavioral response; see conditioned stimulus.

A stimulus can be anything – a sound, a movement, a food item, etc. that causes an animal or human to do something – anything. Stimuli are either conditioned, meaning that they have been paired with another action to achieve their effect, or unconditioned, a biological response such as drooling (Pavlov's dog experiment illustrates the unconditioned stimulus where the presence of food elicits drooling – a biological response).

There are several types of stimuli that will affect behavior.

Discriminative Stimulus (S^D) or Cue – A (conditioned) stimulus that precedes a behavior, signaling that a specific response will be reinforced if emitted correctly. The result is that the stimulus will consistently elicit only that particular response.

The S^D is also called a signal by some. It is the stimulus that tells the animal what behavior you, the trainer, want it to perform. The S^D can be verbal, visual, auditory (ex. the different whistle types used for sheep herding in dogs), or even tactile. Each behavior, when trained, should be assigned a particular cue, or S^D, that distinguishes it from every other behavior.

There are several methods of conditioning an S^D for a behavior (assigning the cue). It can be done once the behavior has been completely trained or while it is being shaped. To shape the S^D, the trainer should show the S^D and then run the animal through the behavior. The pairing of the cue with the behavior should lead the animal to make the association between the two.

Stimulus Control – A behavior is said to be under stimulus control if it meets 3 conditions: 1) It is immediately offered following the S^D; 2) It is offered only when preceded by the correct S^D; 3) It is not offered in the presence of another S^D.

Stimulus control is an important element of a training program. The consistency of animals performing correct behaviors on cue can provide the animal care staff with better behavioral control over the animals, which can lead to better management and animal care.

Behavioral Criterion – The level or behavioral response that must be met to earn reinforcement.

A behavioral criterion is really no different from any other criterion. However, within a training program, each behavior should be trained one step at a time so that the trainer (and animal) is focused on only one criterion at a time. For example, when training a sea lion to perform a handstand,

the trainer has several criteria to consider: proper form for balance, stationary position, and duration. Each criterion should be shaped separately so the sea lion is aware of what it is being reinforced for (rather than bridging one response for duration and the next for form - the animal would not know which criterion was being reinforced).

Schedules of Reinforcement – *The conditions or parameters under which reinforcement is delivered; see continuous reinforcement and intermittent reinforcement.*

Animals are generally positively reinforced for emitting correct responses. The reinforcement can be offered after each correct response (continuous reinforcement) or after a variable number of correct responses (intermittent, or variable, reinforcement). Each method has its merits.

Continuous Reinforcement – *A schedule of reinforcement in which the desired or correct responses are reinforced every time they occur. Trainers typically use a continuous reinforcement schedule when the animal is in the process of learning a new behavior.*

Continuous reinforcement is optimal for animals that are young or new to a training program, as it provides them with consistent communication regarding what is expected and what is being reinforced. For the same reason, continuous reinforcement is also the method of choice when training a new behavior. Reinforcing each correct response within an approximation communicates to the animal what it is doing correctly.

Intermittent Reinforcement – *A schedule of reinforcement in which not every correct response is reinforced. Any schedule of reinforcement that is not continuous (i.e., variable ratio, variable interval, fixed ratio, fixed interval).*

Intermittent reinforcement comes in several forms, each with its benefit. In general, a variable schedule of reinforcement serves to strengthen behavior and encourage the animal to be more alert and attentive because it will not know which behavior will be followed by not only the bridge, but an additional reinforcer as well.

With a **variable ratio** schedule of reinforcement, the animal is reinforced after a varying number of correct responses. For example, the animal might be reinforced after 3 correct responses, then after 1 correct response, then after 5 correct responses. This helps to keep the animal alert and attentive, as it will not know when the reinforcer will be offered and is likely to continue to perform the behaviors at a high quality.

A **fixed ratio** schedule of reinforcement is similar to the variable ratio schedule except the animal is reinforced following a fixed number of correct responses, for example every 3rd correct response. This method is often not recommended for certain animals that are able to pick up on this schedule and count. If they are able to determine that every 3rd behavior is reinforced, they are likely to put less effort and energy into the first 2 behaviors and perform the 3rd behavior well.

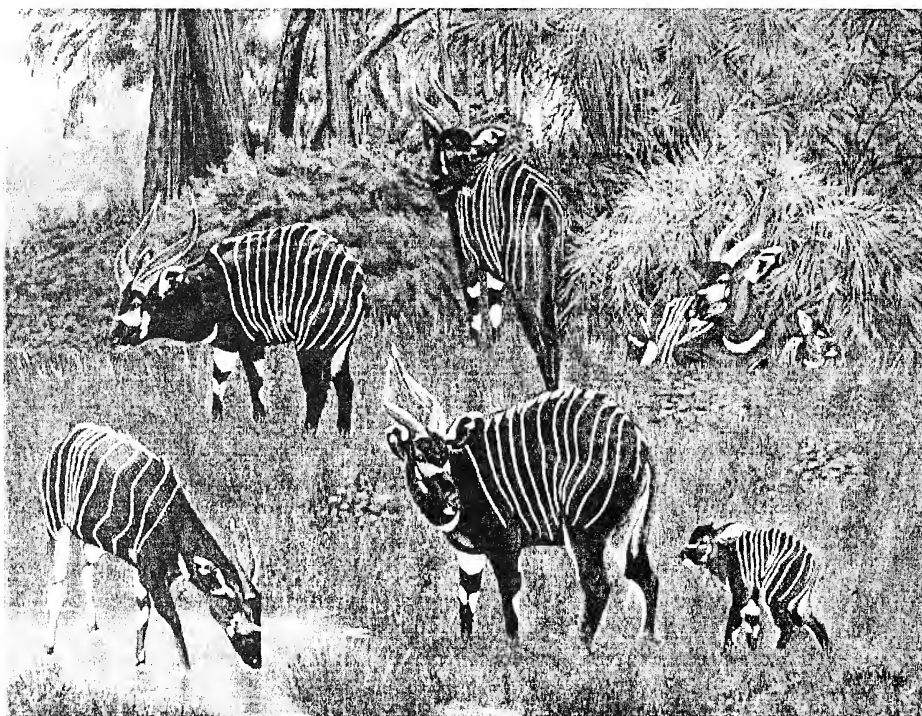
A **variable interval** schedule of reinforcement is one in which the animal is reinforced after a varying amount of time, for example, after 5 seconds, then after 7 seconds, then after 2 seconds (as long as it provides a correct response at the end of the interval).

A **fixed interval** schedule of reinforcement is similar to a variable schedule, except the animal is reinforced after a fixed amount of time, for example, every 5 seconds (assuming its response is correct at that time).

The interaction of stimuli and reinforcers can serve to strengthen a training program and provide effective 2-way communication between trainer and animal. The trainer can provide clear cues that

communicate to the animal the desired behavior and reinforce correct responses using a preferred reinforcement schedule. In return, the animal provides information to the trainer that it understands what is asked of it and can communicate to the trainer through its responses. Of course, correct responses are reinforced – with a bridge and possibly an additional reinforcer – and incorrect responses indicate to the trainer that the animal does not understand what is being asked or does not see the reinforcing value of it. Knowing this, the trainer can model the training program to set both the animal and the trainer up for success.

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"Sentinels of Mt. Kenya" by Jeff Wells

11 x 17 prints of "Sentinels of Mt. Kenya," the original painting featured on the cover of the latest International Bongo Studbook are available for purchase.

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The Behavioral Imperative

By

James Bousquet, Retired Zoo Keeper
Sacramento, CA

Zoos are increasingly including behavioral enrichment in their daily animal care programs. Unfortunately, many of these activities are purely occupational and are not designed to release an animal's "species specific" behaviors. As generations of zoo animals come and go most of their natural behaviors are unused and therefore could be lost forever. Preserving An Animal's "Species Specific" Behavior Is As Important As Preserving Its Genetic Purity (many of these behaviors are carried in an animal's genetic code and "want within" waiting to be released). At last, zoos must address the care of the whole animal by creating Behavior-Based Animal Care Programs (BBACP) which are designed solely to "release" normal behaviors left "wanting within". A commitment to close the Behavioral Gap between zoo animals and their wild relatives is The Behavioral Imperative. Until this gap is bridged and zoo animals are allowed to behave normally, their care is left wanting and must be considered unacceptable. This article will address the problem and offer some solid suggestions that can close the Behavioral Gap and meet the Behavioral Imperative.

When an animal is taken from its natural habitat in the wild and it is placed in a zoo, all of the environmental factors that shaped its behavior are left behind. The environment is the catalyst for the development of behavioral adaptations and natural selection is the process. Scientists consider major habitats, like grasslands, temperate and tropical forests living organisms with their indigenous "...plant and animals contributing to their extraordinarily complex webs of life." (Smithsonian Institution's *Animal, the Definitive Visual Guide to the World's Wildlife*). Permanently remove an animal or plant species and the habitat is damaged or changed forever. Likewise, remove an animal from its natural habitat and put it in a zoo exhibit lacking the environmental "releasers" it needs to behave normally, it will be Behaviorally Isolated and would be damaged forever. An animal is what it does as well as what it looks like, so forcing an animal to live in an environment in a zoo that doesn't allow the full use of its behavioral repertoire must be considered unacceptable and unhealthy. A BBACP will address the problem of lost or unused behaviors head on and should be placed at the forefront of modern animal care.

Developing a BBACP which will give your animals ways to use behaviors lost or unused due to years or generations in captivity will require a fundamental change in the way we look at animal care, enrichment and exhibit design. It will mean creating new technology, terminology and methodology as we seek the reclamation of our animals' innate and learned behaviors. I hope this article motivates, encourages and guides you to investigate the many possibilities a BBACP can provide in your quest of The Behavioral Imperative. Giving your animals a way to reach their behavioral heritage is one of the kindest and most important things you can do for them. Please consider the following:

There is a vast amount of information available about your animals' natural history. This should make it relatively easy to create an overall plan for the development of your BBACP. The ideas and suggestions in this article should give you a good start on this program. First, create a Behavioral Model by identifying all of your animal's Behavioral Complexes. Outline every component of each behavioral complex. Next, research your animal's natural habitat so you can find the "releasers" for each behavioral complex. Use this information to develop an Environmental Plan, which will help you evaluate, and design the changes necessary in your exhibit. The sheer number of books, newsletters, magazines and research papers should give you the foundation of your program, and it will allow you to cross-reference your data for accuracy. However, without a doubt, the most valuable and applicable information about your animals can only be found by observing them in the wild in their natural habitat. I am sure some of you would be stunned to see how your animals behave in the

zoo compared to the same animals living in the wild. Observing your animals in the wild will give you the true meaning of and urgency of the Behavioral Imperative! An animal and its environment are one, and one cannot be fully understood in the absence of the other. An effective BBACP can only be developed with the information gained by observing your animals in nature. It will be the definitive guide for your program.

Of course, as I have said before, it is impractical to travel to each animal's country of origin to study its behavior. However, there is a lot of information about your animals living in the wild available on cable TV programs like "Nature", "Nova", "Wild Discovery", "National Geographic Explorer", "National Geographic Presents" and "Animal Planet". It would be a mistake to ignore these valuable resources. It will be well worth while to scan your *TV Guide* and mark programs about your animals or similar species (Similar animals living in similar habitats can also give you some valuable information for your programs). An even better way to make these programs available to everyone is to create an Animal Behavior Video Reference Library (ABVRL). Many programs are available at a reasonable cost plus shipping and handling. If they are not available for purchase, the people who produce them may grant permission to record these programs, or they may just donate them to a good cause. Developing an ABVRL would be a great project for an AAZK Chapter looking for a challenge. The participating chapter(s) would procure, review and catalogue the programs and make them available at a reasonable price to zoos developing a BBACP (or free through grants). The fees collected from program rentals would be used to maintain and update the video library.

After you have completed your behavioral model and your environmental plan, you must evaluate the exhibit you will use to see if it will meet your needs as is or must be enlarged or renovated in some way (Start your program with one animal exhibit and use it as a prototype for your overall BBACP). I have identified five criteria you can use to evaluate the exhibit you will be using. They are Time Management, Special Requirements, The Environment, Dietary Considerations and Training. (*Editor's note: This is a similar idea to the currently existing Enrichment Video Library which is sponsored by AAZK, Inc. and The Shape of Enrichment located in San Diego, CA.*)

Time Management

Managing your animals' lives in time as well as space will be a new way of caring for them. An animal's life does not abruptly begin at 8:00 a.m. and end at 5:00 p.m. Yet, in most zoos animals must fit a full day's activities within this time period. All animals' lives, as I am sure you know, are controlled by an internal 24-hour clock. Their day is divided into an active period and a rest period. Everything an animal does to meet its needs is carried out in its active cycle. In most cases an animal's active period is longer than eight hours. Behavior-based time management will give you ways to expand your animal's day so normal activities can be done in a more natural time and space pattern. Here are some suggestions which should help you develop a behavior-based time management program:

1. Prepare an outline of all of your animal's behaviors in the wild during its active cycle (I will show you how to calculate your animal's active period in the zoo later in this article).
2. Prepare a timeline for each behavior complex so behaviors can be released at times that are as close to those in the wild as possible.
3. Use your timeline to prepare a schedule of activities for every day of the week.
4. You will need to put your animals up several times a day, so be sure to add this requirement to your Special Requirements.
5. Be sure to include the Night Staff in your planning process. They will be a valuable part of your program.
6. Calculate your animal's active period in the zoo. Your schedule of activities derived from the wild will fit into this time period.

It will be fairly simple to calculate your animal's active cycle. However, you will need some specialized equipment to do the job. Wildlife photographers use a video camera with a motion sensor so animals can be filmed while photographers are not there. A red spotlight connected to the

motion sensor will illuminate the subject while not disturbing it. Connect the camera and spotlight to a timer and set it to begin and end two hours before you come to work and start and stop two hours after you leave. Adjust the times until you see the time of day the animals get up and go to sleep. Count the number of hours between rising and going to sleep and you will have their active cycle (Film the animals periodically because there may be changes in the active cycle due to summer's longer days or they may become more active with more things to occupy their time while you are not there). A video record of changes in your animal's behavior before and after the program begins will be valuable information to share with others as well.

Spacial Requirements

Though the day of the "Postage Stamp Zoo" is long gone, many zoos still exhibit too many animals. The result is exhibits that are too small and animal care that is spread too thin. A BBACP will give you ways to improve your animals' lives no matter what size the exhibit, but having all the space you need makes the process easier and more effective. Here are some suggestions that will help you determine how much space you will need and if you are stuck with a small exhibit it will help you utilize the space more efficiently.

1. Prepare a scale drawing of the exhibit you will be using for the program (For the best results, make it a three-dimensional model).
2. Estimate the size of each expression zone using your behavioral model and environment plan.
3. Make scale drawings of each expression zone (Make three-dimensional models if you can).
4. Cut out or assemble your expression zone drawings or models and place them in or on your exhibit plan.
5. Adjust the size and shape of your expression zones to fit your exhibit plan.
6. Don't give up if you are dealing with an exhibit that is too small. You may find you have more useable space than you thought if you use this plan. Remember that an animal's territory has height, width and depth. Evaluate your entire exhibit and you may find it will be fine for a BBACP. Many animals' territory extends beyond the wire fence perimeter, so develop activities outside the exhibit, but within their reach.
7. You may find it necessary to put your animals up in holding areas several times a day to service the expression zone at the appropriate time of day. Add two or three rooms, stalls or pens for this purpose. If the animals must be locked up at night, your animals' expanded day's activities will be adapted to this space.
8. If you don't have enough space in your present exhibit, consider expanding to space available around your exhibit or removing an animal from the collection so exhibits can be doubled up.

THE GOAL IS QUALITY OF LIFE, NOT QUANTITY OF ANIMALS! Fewer animals' means more exhibit space, more time for your animals, and behavior-based animal care to close the behavioral distance between wild and captive animals.

Dietary Considerations

Developing a behavior-based feeding program for your animals may be one of your greatest challenges. In the wild, finding and eating food can take up a large part of an animal's active cycle. Highly concentrated, nutritious zoo diets that take little time and effort to eat has left a large void in zoo animals' lives. A behavior-based feeding program will give you ways to feed your animals in a time-sensitive way, which utilizes normal behaviors, as well as the morphological adaptations they employ. Getting a meal in a natural way satisfies much more than hunger. It also satisfies the need to use specialized feeding adaptations. The time element is important because natural selection has equipped animals to find a meal and carry out other important activities without burning more calories than they can take in on a normal active cycle. A behavior-based feeding program will help restore this balance by giving animals a way to use specialized feeding adaptations while taking more time and energy to do it.

Recently I saw a great program about Bonnet Macacas (*Macaca radiata*) on "Wild Discovery". I thought this program would be an excellent example of how you can take information from an animal program on TV and apply it to a BBACP (Bonnet macacas are typical macacas. So, the information about them on the program can be applied to other macacas with similar behaviors living in similar habitats). Bonnets are very intelligent, resourceful and sometimes violent monkeys. The dominant groups hold and vigorously defend the best territories. The alpha animals in the group know where all of the best food exists in their territory. Books say they are nonstop foragers, eating insects, crustaceans, small animals, birds' eggs, fruit, flowers, nectar, etc. They live in the tropical rain forest and they exploit every niche to get a meal. Even the best books are no substitute for seeing animals interact with their environment when searching for a meal. The program on "Wild Discovery" made it clear that there are four distinct places they forage for food in their territory. In the zoo the four parts would make up the macacas feeding expression zone.

They are as follows:

1. The trees
2. The ground
3. The banks of streams and ponds
4. In streams and ponds.

Trees

Most zoos have artificial trees or tree-like structures in their primate exhibits. Many of them are more decorative than useful. Most primates spend at least part of their day foraging in the trees, so finding ways to encourage them to move into the trees is a worthwhile project. A good way to do this is to provide a variety of feeding opportunities in the trees. A good wildlife program like the one on "Wild Discovery" will give you many workable ideas for a behavior-based feeding program. These suggestions are based on what I saw on the program, so they may be helpful in establishing your program.

1. Depending on space, build five to 10 trees or tree-like structures.
2. Use the trees you see on the program as a model for the trees or tree-like structures.
3. Install four-to-five snaps on the underside of each branch.
4. Build a variety of feeding apparatus with a ring at the top so they can be snapped and unsnapped on the bottom of each branch. This will give you an easy and efficient way to install and remove the feeders several times a day.
5. Carve three-four cavities in the trunk of each tree and place edibles in them.
6. Put small nectarines on each tree so the monkeys can lick them for a sweet treat.
7. Experiment with ways to present fruit on the trees that will replicate fruiting trees in the wild.
8. At certain times of the year, caterpillars hang from limbs on long silken strands. The monkeys stand on top of the limb and haul the caterpillars in hand over hand for a special treat. It would be fun to see if this can be replicated in your exhibit.
9. Some of the trees located near streams or ponds had branches that extended low over the water. The macacas hung by their back feet and foraged for food on the surface of the water and waist deep below the surface. This could easily be replicated in the zoo.

Ground

Presenting feeding opportunities on the ground has been widely explored in most zoos. I would recommend less feeding on the ground and more feeding in the other three niches in the feeding expression zones to add variety to the program.

Stream and Pond Banks

Creating stream and pond banks can add variety to your feeding program, increasing the expenditure of time and energy used during feeding. It can be done simply, like this:

1. Excavate a trench one-foot to one-and-one-half feet from the edge of the stream or pond. Dig it to a depth of two feet and three to four feet wide. Fill it with washed river sand. Wet

- the sand periodically to give it texture and density (to hold feeders and rocks more easily).
2. Place 10 to 15 rocks of varying size and shape in the sand so edibles can be placed under them.
 3. Bury capsules with mealworms, crickets and raisins in them. Add scent to aid the monkeys in locating the food.
 4. Press edible plants, fruit and veggies into the sand so the monkeys can harvest them.
 5. Replace sand as needed.

In Streams and Ponds

I have seen a few primate exhibits with water features in them, but I cannot recall seeing any that were used as a part of a regular feeding program. The Bonnet macacas foraged for food on the water, in the water and under the water (They seemed to swim for pure enjoyment as well). This feeding opportunity is largely unexplored in zoo feeding programs. It would be relatively easy to incorporate this unique feeding niche into your behavior-based feeding program.

1. Strategically place logs, rocks and tree limbs so the monkeys can stand on them and grab food floating on the surface of the water.
2. Adjust the height of limbs and branches so the monkeys can reach food items on feeders floating just below the surface of the water.
3. Design a feeder that can be placed on the bottom of the pond or stream. Some of the most daring monkeys will swim underwater to exploit this part of the feeding niche others are afraid to explore. It would be easy to teach the monkeys to recognize this resource by placing the feeders on the bank at first. Then on the surface just under the water, then on the bottom.

The Environment

The environment you create for your animals will be the foundation of your BBACP. Just like in nature, the environment you create for your animals will release normal innate behaviors. Creating an environment that meets all of an animal's behavioral needs doesn't require a perfect replica of the natural habitat. As I demonstrated in the section Dietary Requirements you can release normal behaviors even if a substantial part of the exhibit is manmade. Your ability to evaluate the success or failure of your program will depend on the depth of your research. The more accurate and complete your behavioral model and environmental plan, the better prepared you will be to measure the progress of your behavior-based zoo environment.

Training

Today zoo animals are trained to do all manner of things. The article "This Little Piggy Had a Hoof Trim" by Pilar Hicks in the March 2003 issue of the *Animal Keepers' Forum* is a wonderful example of how training can reduce stress and the need to immobilize an animal for hoof trimming. However, there has been little training in zoos to teach animals how to use learned and innate *behaviors lost, unused or fragmented due to captivity*. In some cases zoo animals' behaviors are shockingly different than their wild relatives. The next great challenge in animal training must be teaching animals how to use innate and learned behavior lost in captivity. Behavioral Reclamation through training is a wonderful gift you can give your animals. Hopefully, in time and successive generations, animals will be able to pass on behaviors you taught them to their offspring.

Unused Behaviors

These are behaviors that are not released because an animal is living in a sterile environment or the environment does not give the animal a way to complete a behavioral complex. If an expression zone does not release normal behaviors, training may be necessary to free the behavior.

Fragmented Behaviors

These are behaviors that are only partially released because environmental factors don't allow the

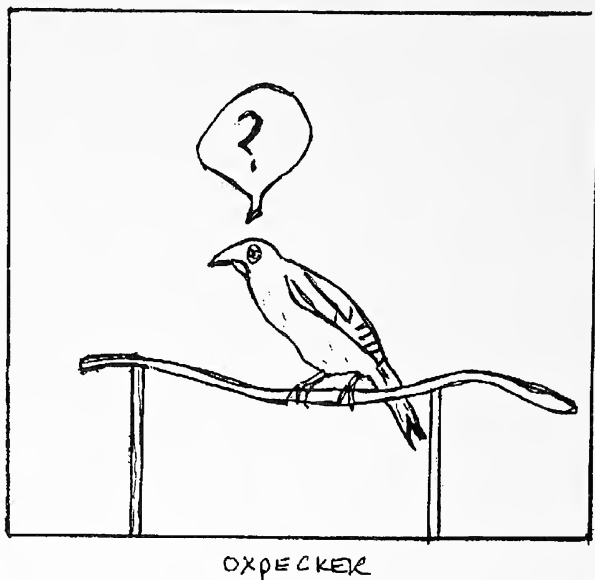
animal to complete the entire behavior complex. Another cause may be keepers thinking the behaviors they see are complete behavior when they are not. If a well-prepared expression zone releases only part of a behavior complex, training may complete the complex.

Lost Behaviors

These are behaviors that have never been used by an animal because it is the progeny of 40 or 50 generations in captivity. Early zoos cared little about the behavioral aspects of animal care. Zoos were purely recreational in nature. The more animals, the better. In fact, zoos were the target of disturbed or violent visitors who teased the animals and threw things at them. Animals not only lived in a miserable environment, they had to endure the abuse of visitors as well. Your research will make it clear which behaviors your animals are not using. Searching for clues to behaviors lost due to years of captivity will be a rewarding and challenging process. Make this breakthrough for your animals.

As I was preparing for this paper I searched for a good example to illustrate the difference between conventional animal care and a behavior-based program. Many years ago I bought a book from the AAZPA (now AZA) called *The Fundamentals of Zoo Management*. In the section about exhibit design and graphics an exhibit holding an oxpecker (*Buphagus erythrorhynchus*) was used as an example of a symbiotic relationship. A photograph showed an oxpecker sitting on an outline of a large herbivore (probably a cape buffalo (*Syncerus caffer*)). In the wild the oxpecker cleans the buffalo's skin and fur, while the buffalo tolerates the bird because it will be freed of parasites, dead skin and scabs. I thought this would make an excellent example because it was obvious the bird was living in an exhibit that was acceptable in the past and it was the victim of fragmented behavior. I am sure the bird received excellent care even by today's standards *i.e.* nutritious food, a clean environment, adequate medical care and so on. At the time I thought it was a nice exhibit, although it looked like it was not big enough. Today it looks like a cruel hoax on the bird. The oxpecker was

compelled to sit on the outline of the Cape buffalo because of its shape, but the perch didn't give the bird a way to complete its behavior complex. So there it sat in behavioral limbo, not knowing why it must sit on the outline and not knowing what to do next. Quite simply, if the exhibit were behavior-based it would have given the bird a way to complete the behavior complex. The oxpecker's food foraging complex includes searching for a host, landing on the animal, using its comb-like beak to sift through the animal's fur and clean its eyes, nose and ears. When the oxpecker is satiated the behavior complex is complete. The ungulate, of course, is the trigger for the oxpecker's food-foraging behavior.



It would not be practical or safe to let oxpeckers forage on a live cape buffalo, so the next best solution is to build a life-size model of a cape buffalo, enlarge the exhibit and find ways to provide food for the oxpecker on the body of the model. Zoos fabricate artificial trees, rocks, vines, coral and many other things to add realism to an exhibit. Why not build a female Cape buffalo and calf as a releaser for the oxpecker's natural food-foraging behavior complex? Install snaps on the body of the buffalo so cured hides or artificial fur can easily be applied and removed as needed. Bait the hides with BOP, mealworms and peanut butter. When all of the food has been cleaned from the fur

by the ospecker the hide can be replaced for cleaning and a newly baited hide can be attached to the model. Make small receptacles in the model's eyes, nose, ears and caudal fold so they can be baited with edibles (BOP, mealworms, crickets, peanut butter). Create a bobble head effect on the head and tail of the models to add realism and challenge the bird. As you can see it would not be difficult to change an exhibit from a traditional theme to a behavior-based program. The reward for the bird would be immense. It gets to use behavior "wanting within" while using its specialized comb-like beak and feet. The exhibit would be much more interesting and educational for visitors because the graphics would explain what they are seeing, not what they are not seeing.

MEERKATS:

Meerkats (*Suricata suricatta*) offer many unique behaviors that lend themselves to a BBACP in captivity. Meerkats are very social and as a result they display some unique behaviors and communication that are rare in small mammals. I would like to show how I would develop a behavior-based program using research from animal books and TV programs about meerkats. I think you will see how important seeing meerkats on TV is to program development.

First, I would like to quote a description of meerkats using Smithsonian's "Animal". Their information tells us a lot about meerkats that we already know. I am using their description so you can compare what is available in a book to what can be observed on a TV program about meerkats. You be the judge of which is more valuable.

"the meerkats long front claws are used to dig its burrows and to find food, mainly insects, spiders, scorpions and other small mammals."

"Diurnal and sociable meerkats form colonies of up to 30 individuals."

"While pack members forage some act as sentries, especially for hawks and other aerial predators. Sentries stand at vantage points such as mounds, and in bushes and cheeps, barks or growls denote urgent threats and meerkats dive for cover"

I am sure there are books available about meerkats that are more complete. No doubt some of them are written by the naturalists who have also done programs for cable TV. I feel information from books is valuable, but actually seeing meerkats interact with one another and their environment opens up for more opportunities for behavior-based programming. TV programs make it immediately clear that there are two major expression zones that would be applicable to a captive environment. They are The Home Burrow and Food Foraging Arena.

The Home Burrow Expression Zone

I observed the following behaviors on TV ("National Geographic" and others):

1. Sunning Behavior
2. Crowding Behavior
3. Play Behavior
4. Grooming Behavior
5. Nanny Behavior
6. Social Behavior
7. Parental Behavior
8. Burrow Maintenance Behavior
9. Predator Detection/Escape Behavior

The Food Foraging Arena Expression Zone

1. Dominant/Subordinate Behavior
2. Leading Behavior
3. Foraging Behavior/Feeding Behavior

4. Possessive Behavior
5. Predator Detection/Escape Behavior
6. Predator Harassment Behavior
7. Communication Behavior
8. Sentry Behavior

Ideas For The Home Burrow Expression Zone:

1. BURROW: Large enough to hold the entire group at once. Build the frame of the home burrow out of concrete or use a large concrete drainage pipe. Leave the front open and build doors at the back for cleaning. Use sandy soil in the home burrow area so the burrow can be covered and soil can be placed inside and bermed in front (Periodically push soil into burrow so meerkats will have to clear in out).
2. ACTIVITIES AREA: Excavate a large flat smooth area directly in front of the home burrow for social activities, play, etc.
3. SUNNING BERM: Make an earthen berm facing east-southeast at the side of the activities area so the meerkats can sun themselves in the morning (Indoors use sun lamps).
4. SENTRY PERCHES: Locate mounds, bushes and rocks around the home burrow area to encourage sentry behavior (May require training).
5. PERIMETER ENRICHMENT: Place hollow logs, rock piles, bushes, etc. around the home burrow area to release investigative/curiosity behaviors. Place some of it between the home burrow expression zone and the food foraging arena expression zone to give each area separation/own identity.
6. HOLDING ENCLOSURES: If not already there, build two or three holding pens so the meekest can be put up for cleaning, expression zone preparation.
7. NANNY BEHAVIORS: At least one meerkat stays at the home burrow when youngsters are present. The nanny acts as a sentry for the protection of the offspring while others are away on foraging "sorties". If there are no offspring, have someone make models of offspring. If this doesn't work, try training.
8. PREDATOR DETECTION: This is an important survival skill for meerkats. I see no reason why this behavior cannot be released in the zoo. Building models of raptors, snakes and jackals would release flight response tension and strengthen social bonds. Of course, do it cautiously. Meerkats have special vocalizations for each predator observed. If they don't use the correct vocalization, record the "snake", "raptor", "jackal" vocalizations from meerkat programs and play them when predators are presented.

These are only suggestions. I am sure as you get into the program in the home burrow expressing zone you will be able to enrich your meerkats' lives as never before.

The Food Foraging Arena Expression Zone:

1. EXPRESSION ZONE IDENTITY : Create ways to separate each expression zone so only the appropriate behaviors will be used in each area (Berms, rocks, bushes, fallen trees, distance, etc).

2. **SIZE:** The size of the expression zone will depend on the number of animals. Too much space is better than not enough. Meerkats can be very possessive of their food, so spread out feeding opportunities.
3. **FORAGING BEHAVIOR:** Create many and varied foraging opportunities. This will reduce fighting/competition and increase work for a meal. Use sandy soil so the edibles can be buried. Make terrain varied with termite mounds, rocks, fallen trees, bushes, grass etc.
4. **EXCAPE BURROWS:** Build three or four secondary burrows so the meerkats can rush into them at the sight of a predator.
5. **PREDATOR DETECTION:** Introduce models of predators to release escape/predator harassment behavior. Meerkats are not afraid to pester snakes until they leave their territory. Having several types of fake snakes to introduce periodically would be very interesting.
6. **SENTRY BEHAVIOR:** Meerkats take turns acting as sentries. When one gets tired another takes its place so it can get a meal. I am sure this behavior could be encouraged or conditioned with a reward system.
7. **LEADING BEHAVIOR:** The alpha meerkat leads foraging sorties. Try to find out which animal is dominant. Encourage it to lead foraging activities (training may be necessary).

What an interesting exhibit this would be if visitors could see meerkats using their unique behaviors. Prepare a schedule for visitors so they can be there to see all of the behaviors planned for the day.

As we learn new things about animals living in the wild revealed through long, concentrated studies by animal behaviorists, it becomes sadly apparent that zoo animals' lives are substantially different than that of their wild relatives. The most glaring differences are in how the animals behave. Zoo animals, in some cases, behave so differently that their behaviors can be only be considered abnormal or aberrant. Zoo animal care has concentrated on vast complex exhibits, nutrition, and veterinary care, while the animals behave less and less like their wild relatives. Behavior-Based Animal Care's time has come. We must find ways to allow our animals to behave normally, lest their natural behaviors be lost forever. It is The Behavioral Imperative.

Legislative/Conservation Update

Compiled by Georgann Johnston
Legislative Advisor
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Interior Department Issues Revised Regulations for Endangered Species on Private Lands in U.S.

In late April 2004, the Department of the Interior issued revised regulations that will encourage private landowners to undertake voluntary conservation measures on their property to benefit threatened, endangered and at-risk species. An Interior Department spokesperson said that "the new regulations will improve the U.S. Fish and Wildlife Service's (USFWS) Safe Harbor and Candidate Conservation Agreement with Assurances (CCAA) policies by providing clearer definitions and more certainty to property owners."

The Interior Department hopes that the revised regulations will encourage more landowners to participate in this voluntary conservation by spelling out more clearly the terms and conditions of the agreements. "Safe Harbor agreements have been a very effective way of enlisting the cooperation of private landowners in conserving endangered species," said Michael J. Bean of Environmental Defense, an organization that helped develop the first such agreements nearly a decade ago. "These changes should facilitate the even broader use of this creative new conservation approach by farmers, ranchers, and forest landowners."

Under a Safe Harbor agreement, private landowners agree to take actions on their property to benefit species that are listed as threatened or endangered under the federal Endangered Species Act. In return, they receive assurances that their conservation measures will not lead to further restrictions on the use of the land if they lead to an increase in the population of the species on the property. CCAA's are similar agreements except that they apply to species that are either proposed for listing under the Act or are on the candidate list. In these cases, the landowners get assurances that their conservation actions, if successful, will not lead to further restrictions under the Act if the species is listed in the future.

There are now 23 Safe Harbor permits covering 29 listed species and involving more than 130 landowners. More than 50 additional Safe Harbor Agreements are under development. Seven CCAAs are in effect, covering 21 species. More than 25 additional CCAAs are under development. The revised regulations will make such agreements easier to understand and implement, by eliminating inconsistencies between the policies and the regulations used to implement them. In addition, experience gained since the policies and regulations were adopted in 1999 has shown the need to clarify ambiguities in the regulations that have been causing confusion for landowners.

The rule more explicitly provides landowners with greater certainty that such agreements will be altered only if continuing an authorized activity may jeopardize the existence of the protected species. The rule also ensures that traditional agricultural uses can continue alongside habitat improvements.

Source: USFWS Press Release 28 April 2004

USFWS Publishes Updated List of Candidates for Endangered Species Act Listing

The USFWS recently published a revised list of species of plants and animals that may warrant protection under the Endangered Species Act, including 26 new candidate species added since the Candidate Notice of Review (CNR) was last published in 2002. If the Service has sufficient information to propose listing a species as threatened or endangered, but is precluded from taking action by other, higher listing priorities, the species becomes a candidate species.

The Service publishes an updated CNR primarily to solicit new information on the status of candidate species and threats to their survival. Service biologists rely on a variety of sources for the scientific

determination of whether a species may warrant listing under the Act, including information from private, university and government scientists, local, State and Federal land management and planning agencies and private citizens.

The new CNR also informs the public about species the Service is considering proposing for protection, and it encourages conservation of candidate species. In addition, the document also includes 24 domestic animal species that have already been proposed for addition to the list of endangered and threatened wildlife and plants, but for which a final listing determination has not been made. A proposal undergoes public review and comment before a final decision is made.

“The candidate list is an important tool, helping to identify imperiled species and focusing attention on the need to conserve them before they have to receive Endangered Species Act protection. By working to recover these species now, in partnership with states, local communities and individuals, we can implement flexible, cost-effective conservation measures that put them on the road to recovery,” said USFWS Director Steve Williams.

The following species have been added to the list since 2002:

MAMMAL: Fisher, West Coast Population (*Martes pennanti*) BIRDS: Kittlitz’s Murrelet (*Brachyramphus brevirostris*); Xantus’ Murrelet (*Synthliboramphus hypoleucus*) AMPHIBIANS: Mountain Yellow-Legged Frog (*Rana muscosa*); Yosemite Toad (*Bufo canorus*) Plus ten species of mussels, four species of cave beetles, and five species of plants.

The following animal species have been removed from the list since 2002, having been either listed as endangered or the proposal for listing was withdrawn. MAMMALS: Pygmy Rabbit (*Brachylagus idahoensis*); San Miguel Island Fox (*Urocyon littoralis littoralis*); San Miguel Island Fox (*Urocyon littoralis catalinae*); Santa Cruz Island Fox (*Urocyon littoralis santacruzae*); Santa Rosa Island Fox (*Urocyon littoralis santarosae*)

BIRD: Mountain Plover (*Charadrius montanus*). AMPHIBIANS: California Tiger Salamander (*Ambystoma californiense*); Mountain Yellow-Legged Frog (*Rana muscosa*). FISH: Coastal Cuthroat Trout (*Oncorhynchus clarki clarki*). Plus one snail, one insect and eight species of plants. Source: USFWS Press Release 4 May 2004

Biggest ESA Protection Effort Ever

In what is described as “the single largest effort to protect imperiled species in the history of the ESA,” a coalition of conservation groups and renowned scientists, lead by the Center for Biological Diversity, have petitioned to have 225 candidate species finally given the Act’s protection reports *Greenwire*. The petition included 1,000 pages of biological and ecological information about the plants and animals which have been languishing without ESA protection in a listing backlog - “on average, the 225 species have been on the candidate species waiting list for 17 years.” A recent CBD study “found that systemic delays in protections, including lengthy waits on the candidate list, contributed to the extinction of 114 species since 1993. FYI: <http://www.biologicaldiversity.org/swcbd/programs/bdes/cp/index.html> Source: *GREENlines Issue #2101 5-5-04*

When Wild Isn’t Really Wild

Many people think a wild fish is one hatched in the wild. This is a mistaken assumption under the Bush Administration. Instead, under a new plan put forward by environmental advisors for the President, the difference may be all in the catching. The distinction between farm-bread salmon, which are later released into rivers and streams, and their cousins hatched in the wild, is being eliminated. That action will instantly raise the overall tally of salmon - making it more probable that the government will eliminate or downgrade protections for 15 salmon species now sheltered under the ESA.

The change is favored by power and timber companies who want to eliminate restrictions on their activities placed by the ESA. Environmentalists complain that the action will jeopardize the survival of truly “wild” salmon.

Further, critics of the plan point out that other “word games” have resulted in misleading results. Like changing the category of burger-flipping jobs, once part of the service sector, to fall into manufacturing. Then, statistics on the loss of manufacturing jobs to offshore sources do not look as bad. Ditto reclassifying middle-income workers being reclassified as white collar managers ^ making them ineligible for overtime pay. Or an ongoing attempt by the Energy Department changing the designation of some radioactive waste from “high-level” to “low level” toxins, resulting in cheaper disposal costs. *Source: Newsweek Magazine 10 May 2004*

Cambridge University Shelves Plan for Primate Brain Research Center

In early 2004 Cambridge University in Great Britain decided to halt a plan to construct a controversial center for brain research experiments on primates - primarily monkeys. Cambridge officials came to the conclusion that escalating costs, including those for measures needed to protect the facility from animal rights militants, were too great.

Before the decision was reached local planners had twice turned down the University’s application to build a research center, partly because the site was in a protected “green belt” and partly due to police concerns over public safety. Numerous public hearings on the topic were held and expert witnesses from a variety of sources - including animal rights advocates, neurologists, conservationists, and related scientific authorities - testified as to lack of need for such a facility when less invasive and costly methods of performing the same research are already available.

While the public hearings and appeals were going on, the University’s own council (governing board) began its own investigation. The council said that they had been mislead not only about the cost of the project but with respect to the nature and extent of the proposed research projects expected to take place there. Continuing adverse publicity led to the council, acting for the University, issuing a statement in late January that the whole project was being abandoned. *Source: Animal Action Report Spring 2004*

More Bad News for Animals in Pre-Olympics Greece

We reported in a previous edition of this column that Greece - home to the upcoming summer Olympic games - was trying to get their population of street dogs and cats under control before the onslaught of visitors. The process has not gone smoothly. Initially, the Athens local governmental officials developed a large scale plan to euthanize hundreds of dogs to remove them from the streets. This plan was met with furious opposition from animal rights activists and humane groups around the world.

Greece then turned to two local animal activists who developed a plan to promote adoptions of street dogs and cats. Unfortunately, after an undercover investigation in March 2004, it was discovered that the so-called “activists” were actually selling the animals to various biolabs outside Greece for experiments. The showdown came at the Athens International Airport, where airport officials removed six puppies from an airplane destined for Belgium. While paperwork showed that the dogs were being adopted by families in that destination country, in reality, a private laboratory had arranged for purchase and transport of the dogs.

So far claims that the dogs have been sold for meat and pelts have gone unfounded. With construction on sports complexes far behind schedule and the entire Olympic effort reportedly in financial trouble, the Greek news media is preoccupied with a variety of questionable Olympics-related activities. This most recent exposé about the fate of street animals has done nothing to burnish the image of those officials in charge of developing and promoting the 2004 summer games and an investigation into the fate of the cats and dogs is ongoing. *Source: Animal People: News for People Who Care About Animals vol. 13, no. 3, April 2004*

Colorado Lynx Releases Underway

Twenty-three of 37 lynx (*Lynx canadensis*) to be released in Colorado this spring are now back in the wild reports the *Durango Herald*. The four, captured in British Columbia and Quebec, had spent the past three months in a wildlife center “to make sure they were in condition” and to wait until after the breeding season to reduce the stress of adapting to the new environment. So far the reintroduction program has placed 42 lynx in the wild in 1999, 47 in 2000 and 32 last year. No lynx were released in 2001 and 2002 “because the breeding cycle of the lynx in Canada and Alaska was at a low point.”

In a related story, a new report to the European parliament warns that the Iberian lynx (*Lynx Pardinus*), now down to an estimated 135 cats and only 28 breeding females, is “on the verge of extinction” reports *The Guardian (UK)*. The population has plunged from thousands four decades ago and “the remaining animals are widely separated and there may be only one viable population left: in the Sierra Morena in southern Spain.” And, that population is threatened by a new highway. The report concludes that “the first extinction of a big cat species since prehistoric times would be an embarrassment to the European Union.” Sources: *GREENlines Issue #2092 4-22-04* and *GREENlines Issue #2097 4-29-04*

New Mexico Backs Mexican Wolf Reintroduction

The New Mexico Game Commission has “unanimously endorsed the Mexican gray wolf reintroduction program” and “urged the USFWS to consider recommendations scientists made in 2001” reports *FindLaw, AP*. The recommendations include allowing the wolves to roam beyond designated recovery areas, allowing wolves in the Gila Wilderness and holding ranchers responsible for removing livestock carcasses so wolves can’t feed on them. The ringing endorsement is a “180-degree switch” for the state which opposed the reintroduction program in the mid-1990s. The commission also approved a “power-sharing agreement with the federal agency to help with the program that has brought an estimated 50 to 60 wolves into parts of NM and AZ.”

In a related item, the USFWS contends that the Mexican wolf reintroduction program is not meeting its recovery goals “due mainly to a high number of wolves killed illegally” reports the *Salt Lake Tribune*. The Center for Biological Diversity agrees and “points to more objective statistics: Wolves equipped with radio collars have decreased from 28 a year ago to 18 today.” There is some reason for optimism, however, as the number of wolves born in the wild is steady and New Mexico’s recent reversal of its anti-wolf stand, noted above, hopefully provides a brighter future for this program. Sources: *GREENlines Issue #2086 4-13-04* and *GREENlines Issue #2097 4-29-04*

Texas Cougars Aid Florida Panthers

Scientists with Florida’s Fish and Wildlife Conservation Commission maintain that the state’s endangered panthers “have a more promising future” thanks to “some genetic help from eight Texas cougars” reports *Florida Today*. The cross-breeding help overcome “reproductive problems among the Florida panther (*Puma concolor coryi*) males” due to their 100-year isolation from other panther populations. The panthers originally ranged throughout the southeast U.S. and “a limited amount of crossbreeding among the various sub-species was normal and beneficial.” The Texas cougars (*Felis concolor ssp.*) have been removed but “the kittens they reared have remained and continued to reproduce” and are considered “genuine” Florida panthers “because the genes from the Texas cats merely mimicked what occurred in the wild” before their isolation. Source: *GREENlines Issue #2093 4-23-04*

Three’s the Charm for California Condors

Three California condor chicks have been spotted in the back country of Ventura County on California’s central coast reports the *San Jose Mercury News*. The chicks are the first wild-born offspring of adult birds released near Big Sur and one of the fathers was “the last wild condor brought in from the wild” in 1987 for the captive-breeding program and then released in May 2002. “To have an original wild condor reproducing again in the wild after 17 years is very gratifying. We have come full circle” said the USFWS. “The first wild chick to survive past its first flight was hatched last year in Arizona,” and that chick, now 10 months old, is “still with its parents and doing fine.” Source: *GREENlines Issue #2096 4-28-04*

A Problem for All Dinosaurs

Scientists contend that the extinction of dinosaurs 65 million years ago may have been caused in part by a “lack of females” reports *Planet Ark, Reuters*. U.S. and British scientists speculate that the dinosaurs, like modern day reptiles “change sex based on temperature,” and the asteroid strike that dramatically cooled the Earth’s climate could have caused to many of them to be born male, “even a small skewing of the populations toward males would have led to eventual extinction.”

Source: *GREENlines Issue #2093 4-23-04*

Editor’s Note: GREENlines Issues are a daily news digest from the Endangered Species Coalition about imperiled species and the people working to stop extinction. For more on what you can do visit - <http://www.stopextinction.org>

*Institutions wishing to advertise employment opportunities are asked to send pertinent data by the **10th of each month** to: Opportunity Knocks/AKF, 3601 SW 29th St., Suite 133, Topeka, KS 66614-2054. Please include closing date for positions available, and when setting these dates keep in mind that because of bulk-mail, most readers do not receive their AKF until the middle of the month or later. There is no charge for this service and fax or e-mail listings of positions which become available close to deadline are accepted. Our Fax is (785) 273-1980; e-mail: akfeditor@zk.kscsoxmail.com< Listing must be sent as MS Word attachment. To post a position on the AAZK website, have listing to email address above by the 25th of the month for posting on the first day of the following month. We are no longer located at the Topeka Zoo, so please note new address to avoid delays in processing.*

Animal Care Specialist - The Great Plains Zoo & Delbridge Museum of Natural History, Sioux Falls, SD
We are now hiring for this full-time entry level position which opens later this summer. Applications need to be at zoo no later than 5:00 on Friday, **25 June 2004**. Send resumés to: Curator's Office, Great Plains Zoo & Delbridge Museum, 805 S. Kiwanis Ave, Sioux Falls, SD 57104. NO PHONE CALLS. For more information about the Great Plains Zoo go to www.gpzoo.org< **Responsibilities:** The Animal Care Specialist is responsible for the specialized work involving the general care and feeding of zoo animals including the cleaning and maintenance of buildings, grounds, and exhibits. Job Duties include 1) Performing the general daily care of the animals in assigned exhibit and holding areas. Maintains exhibits and holding areas in a clean and presentable condition at all times. 2) Observes the animal collection for any signs of illness, general lethargy, injury, and dietary problems. 3) Assists the Veterinarian, Director of Animal Services and/or Supervisor of Animal Care in routine animal examinations and assists with any prescribed treatments. 4) Establishes and maintains effective working relationship with fellow employees and the general public. 5) Maintains daily reports, medical records, keeps enrichment and operant conditioning records, and other records as needed in the assigned area. 6) Performs basic restraint, crating/uncrating and transport of animals as required. 7) Any other duties as assigned by the Director of Animal Services or the Supervisor of Animal Care. **Requirements:** Must be able to climb ladders/stairs, lift crates/animals and/or equipment weighing up to 70lbs., handle a fire hose for cleaning, operate weed eaters, lawn mowers, hay elevators, 6x4 John Deere motorized carts, dump trucks, chain saws, load and operate wheel barrows loaded up to 150 lbs. and be agile and flexible to maneuver in and around animals within exhibits, corrals and holding areas. Maintain a current tetanus vaccination (5 years) and willing to be TB tested annually. Must be able to lift and carry up to 70 lbs. Preference will be given to applicants with a degree in an animal-related field and with captive animal care experience. Position is 40 hrs per week with benefits. Must be willing to work evenings, weekends and holidays. Must have a valid drivers license. Any applicant hired must be fingerprinted and TB tested prior to starting. Starting pay is \$8.50 / hour.

Zoo Keeper/Mammals - The Abilene Zoological Gardens, Abilene, TX
Currently seeking qualified applicants for a presently open position working with a wide variety of mammals including two female African elephants managed in a protected contact management system. Applications, resumés and inquiries can be sent to: City of Abilene c/o Human Resources, P.O. Box 50, Abilene, TX 79604. Applications may be downloaded from the City of Abilene website at www.abilenetx.com. **Position open until filled.** Specific questions about the position may be directed to Dale Hembree, General Curator at dale.hembree@abilenetx.com< **Responsibilities:** include but are not limited to - daily care of the animal collection, record keeping, animal enrichment, monitoring behavior and changes in health; maintaining holding and exhibit areas, and informal interactions with Zoo visitors. Other duties include observing and correcting animal behavior, providing assistance in administering veterinary care and maintaining area facilities and equipment. Hours are based on a 40-hour workweek and based upon established Zoo operating hours including weekends and holidays. This is an excellent opportunity for competent individual interested in working in an ever-growing, progressive environment who wishes to grow with the zoo. **Requirements:** position requires strong observation and communication skills. Must have the ability to perform a variety of physical work and be comfortable working in a team environment. Experience in the care of elephants is preferred. Must be highly motivated, team-oriented, and must possess good oral and written communication and interpersonal skills. Manual work is involved. Requires high school diploma or equivalent. The candidate must be eligible to acquire a valid Texas driver's license. Starting salary is \$1,451.47/month (\$669.91 bi-weekly) and an excellent benefits package. Experience and education will be taken into account on an individual basis.

Elephant Handler - Natural Bridge Zoo, Natural Bridge, VA
Send resumé to: Natural Bridge Zoo, P.O. Box 88, Natural Bridge, VA 24578 or Fax (540) 291-1891 or phone (540) 291-2420 or email NaturalBridgeZoo@hotmail.com< **Responsibilities:** the care and husbandry of two (2) African elephants (19 years old) in free contact. **Requirements:** Minimum of three (3) years experience working with elephants. Must be able to do rides, demonstrations and give talks to the public. Looking for an eager, energetic, friendly, self-motivating person. Housing available.

Zoo Keeper Africa – 2 positions (1 Keeper position has June start date; the other a July start date)
Animal Training Coordinator/Zoo Keeper – 1 position (position to be filled in May) – All positions at Frank Buck Zoo, Gainesville, TX
Interested persons should apply with the City of Gainesville Human Resources Dept., 200 S. Rusk St., Gainesville, TX 76240; phone – (940) 668-4590; www.gainesville.tx.us. **Positions open until filled.**
The Frank Buck Zoo, located in the small town of Gainesville, TX, is seeking team-oriented individuals for two keeper positions and one Animal Training Coordinator position in our new "African Savannah". Gainesville has small town appeal and a global attitude. Interested candidates should have the same. **Responsibilities:** a person in

a Keeper position will be responsible for the day-to-day care of the animals in this section, including feeding and cleaning, exhibit maintenance, grounds maintenance and education of the public. The Animal Training Coordinator will be responsible for keeper duties in the African section of the zoo, swing keeping as needed in other sections of the zoo and coordinating/overseeing the zoo's animal training programs. **Requirements:** Candidates for all three positions must have an attention to detail, good communication, people and organizational skills, be a team player, and be motivated. All positions require an Associate's or Bachelor's degree in one of the life sciences and/or the right combination of exotic animal experience. Training experience or coursework is preferred for the Animal Training Coordinator. Salary range is \$20,951 - \$35,906 annually based on experience and includes a benefits package.

Keeper for Australian Animals – Kangaroo Conservation Center, Dawsonville, GA

Send cover letter, resumé and salary history to Fax 706-265-6329, e-mail: rjndwn@aol.com or mail: 222 Bailey-Waters Rd., Dawsonville, GA 30534. We are a **non-smoking AZA facility** located in the North Georgia Mountains, home of the largest kangaroo collection outside Australia. Our facility is known for its outstanding animal care and spacious exhibits of Australian wildlife. Visit our website at www.kangaroocenter.com for more information. Full-time career position open for an enthusiastic, mature and responsible individual with interest in Australian wildlife. **Responsibilities:** Duties include habitat cleaning and maintenance, diet preparation and feeding, landscaping and exhibit construction, assisting with veterinary care, educational tours and record keeping. **Requirements:** Bachelor's degree preferred; keeper experience required. Ability to operate heavy equipment including 2-5 ton standard shift trucks and tractors is required. Mechanical and construction skills strongly preferred. Must be physically strong enough to carry 50+ lb. Most work will be performed outdoors year-round. Rotating work schedule includes weekends and some holidays. Must reside within 25 miles from Center. Starting salary negotiable; commensurate with experience. Benefits include fully paid health care policy, paid vacations.

Facility Maintenance Keeper – Kangaroo Conservation Center, Dawsonville, GA

Send cover letter, resumé and salary history to fax 706-265-6329, e-mail: rjndwn@aol.com or mail: 222 Bailey-Waters Rd., Dawsonville, GA 30534. We are a **non-smoking AZA facility** located in the North Georgia Mountains, home of the largest kangaroo collection outside Australia. Our facility is known for its outstanding animal care and spacious natural exhibits of Australian wildlife. Visit our website at www.kangaroocenter.com for more information. Full-time career position open for an enthusiastic, mature, creative and responsible individual with interest in design and maintenance of an Australian wildlife park. **Responsibilities:** Duties include maintenance of buildings (indoors & out) and landscape maintenance of 87-acre facility. **Requirements:** Applicant should have interest in exotic and native plants and be knowledgeable about plant care, including pruning, spraying, fertilizing, and planting. Should be able to work responsibly inside animal habitats. Ability to operate lawn maintenance and heavy equipment including 2-5 ton standard shift trucks and tractors is required. Construction skills required. Must be physically fit for a position that will require working outdoors year-round. Work schedule may include weekends and some holidays. Must reside within 25 miles from Center. Starting salary negotiable; commensurate with education and experience. Benefits include fully paid health care policy, paid vacations.

Catoctin Wildlife Preserve and Zoo (Thurmont, MD) is looking for professionally-oriented people to grow with us. Information about our facility may be viewed online at www.CWPZoo.com< The following four (4) positions are available immediately and until filled. Duties include all aspects of animal care including feeding, cleaning, observations, monitoring, interaction with the public and assistance with department improvement projects. Salary is commensurate with experience (range: \$16,000 to \$25,000). Support for medical, dental and prescription health care and attendance at AAZK and other conferences and seminars. Paid vacation after one (1) year. Flexible work schedule and personal days. See the following four (4) positions.

Send cover letter and resumé with salary requirements to R. Hahn, Chief Animal Person, Catoctin Wildlife Preserve and Zoo, 13019 Catoctin Furnace Road, Thurmont, MD 21788 or fax at (301) 271-2673, or email to Rickhahn@CWPZoo.com<

Lead Animal Care

Responsibilities: Supervises all Animal Care positions including volunteers and seasonal interns. Must be knowledgeable in the basic husbandry and natural history of mammals and birds, well-organized and able to work well with all staff and visitors. **Requirements:** Must have at least five (5) years experience in an open-to-the-public facility and at least three (3) years of supervisory experience in middle management. College degree a plus but will substitute experience for sheepskin. Must be able to finish the standard requirements for this position description. Salaried. Reports to General Curator/Registrar.

Avian Specialist

Works primarily with psittacines and gallinaceous birds. Flamingos, ibis, doves, kookaburra, mud hens, condor, owl, cranes and ratites are also in collection. **Requirements:** at least two (2) years in a private or public facility maintaining and breeding the above taxa. Knowledge of incubation and rearing chicks is required. Reports to Lead Animal Care.

Animal Keeper/Guides - Soco Gardens Zoo, Maggie Valley, NC

Several positions available for 2004 season, May through October. Salary \$240.00 per week, living quarters, utilities and uniforms also furnished. Please send cover letter and resumé to: Jim Miller, Soco Gardens Zoo, 89 Evans Cove. Rd., Maggie Valley, NC 28751, as soon as possible. **Requirements:** Paid zoo experience preferred but volunteer experience acceptable; non-smokers; applicants must have strong, audible voices, neat appearance, good personalities, and must work well with co-workers as well as with the public. **Responsibilities:** duties include daily animal care of various primates, large and small cats, bear, parrots, wallaby, various reptiles, and others; exhibit cleaning and maintenance; various other maintenance duties; and educational lectures in a tour situation. Must lecture on both non venomous and venomous reptiles. Also, must have experience in handling non-venomous reptiles or a willingness to learn. Must be willing to work six days a week, including weekends and holidays.

Aviculture Interns - Hawaiian Endangered Bird Conservation Program

Program is at the Keauhou Bird Conservation Center (KBCC) on the Big Island of Hawaii and the Maui Bird Conservation Center (MBCC) in the island of Maui. For more information on internships at KBCC, please send a resumé, cover letter, and the names and contact information of three (3) references to: Tracey Goltz, P.O. Box 39, Volcano, HI 96785 or fax (808) 985-7034. For more information on internships at MBCC, please send this same information to: Mary Schwartz, 2375 Olinda Road, Makawao, HI 96768 or fax to (808) 572-3574. PLEASE, no phone calls or emails. **Responsibilities:** daily tasks include husbandry duties such as diet preparation, aviary and facility maintenance, behavioral observations of breeding birds, grounds keeping and predator control. **Requirements:** applicant must be able to live with several roommates in a remote area and should show enthusiasm for work with captive endangered Hawaiian birds. Applicant must have a valid driver's license and health insurance. Internships last for a 3-6 month period and interns receive \$20/day stipend plus housing.

Big Cat Internships - Tiger Creek Wildlife Refuge (TCWR), Tyler, TX

As seen on Animal Planet in "Growing Up Tiger", TCWR is a division of Tiger Missing Link Foundation. **Commencement date:** On-going duration: three (3) months on a month-by-month basis. Summer (May-Aug) Internship Applications due March 1st. For contact information, application packet, additional information, and to see what past interns have to say about Tiger Creek: visit www.tigercreek.org. Are you interested in learning more about big cats or establishing a career path working in conservation as a zookeeper, a wildlife manager or a veterinarian? You can earn your STRIPES at Tiger Creek and obtain college credit through your college or university at the same time. Right now there are up to three (3) positions available consisting of a six (6)-day work week with a strong commitment for three (3) months. At Tiger Creek you are more than a worker, you are considered a friend and we strive to build long-term working relationships as we know you are the future animal caretakers! Based upon your performance after your training, you may be eligible for any permanent animal care positions that become available. **Requirements:** At least 20 years old and a junior in college. You should be capable of paying attention to details and following safety rules; you must have your own transportation to and from Tyler, TX; and you also provide your own food while here. We provide room; uniforms; materials and curriculum; and indoctrination and safety training. The Intern House has central heat and air, a full kitchen, a shared telephone line for incoming calls, Internet access for email and surfing, a TV with VCR/DVD, even satellite so that you and the other interns can enjoy Animal Planet during your off hours! The intern house is fully furnished and dormitory-style with rooms being shared by two people. All of this and a few rescued dogs or puppies in the backyard...because we want your stay to be as comfortable as possible while here at Tiger Creek. The Tyler/East Texas area has a lot to offer, there is horseback riding available at no cost to our interns, lakes within beautiful parks, movie theaters, numerous local night clubs and plenty of restaurants and much more.

Environmental Interpretation and Wildlife Care Internship – Trailside Museums and Wildlife Center, Bear Mountain State Park, Bear Mountain, NY 10911-0427. Contact: Jennifer Verstraete at (845) 786-2701 ext. 278 or 265; email – clayne.keith-feller@oprhp.state.ny.us < Start Dates: Summer internship mid-May through mid-August; Fall internship late-August/early September through early November. Internship is unpaid, but provides knowledge and experience; written evaluation gladly given. Possible course credit if intern can arrange it. Interns will work at least three (3) days a week, including one weekend day. No housing available. We reimburse full payment for required pre-exposure rabies series. **Qualifications:** Enthusiasm, comfortable handling animals, motivated to learn. Must be 18 or older; preference given to college student looking for experience in the care of wildlife and in environmental interpretation. **Responsibilities:** 1) Provide care for permanently injured or orphaned park wildlife (mammals, birds, fish, amphibians and reptiles) in zoo setting. Under the supervision of a Senior Zookeeper will prepare food and diets, maintain enclosures and exhibits, and provide enrichment; 2) Interact with the public answering questions, interpreting exhibits, possibly developing and offering short interpretive talks.

Reptile Internship

To apply send a cover letter, resumé, and at least two (2) (preferably 3) references to: Kristen Wiley, Internship Coordinator, Kentucky Reptile Zoo, 200 L & E Railroad, Slade, KY 40376. Or send via email to: kyreptil@pop.mis.net < Starting dates are flexible, but a minimum commitment of three months covering SPRING (April-June), or SUMMER (June - August), or FALL (September - November) is required. Deadlines for applications each year are: SPRING - February 1st; SUMMER - March 1st; and FALL - June 1st.

The Kentucky Reptile Zoo, a nonprofit organization, is seeking a student intern for the 2004 Fall season. The zoo is an educational exhibit, reptile breeding and venom research facility located near Kentucky's Red River Gorge and Natural Bridge State Park. **Responsibilities:** The intern will assist in the captive maintenance of the zoo's reptile collection, collect admissions to the exhibit, give interpretive talks and interact with the public, assist with educational outreach programs, and perform other duties as assigned. In addition, the intern will be responsible for the completion of at least one research project related to the field of herpetology. The intern will **not** be involved in the handling of any venomous reptiles. **Requirements:** Desirable qualifications include a willingness to handle snakes and other reptiles on a daily basis, ability to communicate effectively with people, writing skills, orientation to details, and self-motivation. The intern will be required to work both Saturday and Sunday, with days off during the week. Students majoring in the biological or natural sciences are preferred. Interns are required to be either college students or recent graduates. Former interns have arranged for academic credit with their institutions. Interns have also been successful in finding zoo keeper positions, with a hire rate of over 95%! Benefits include experience with the most extensive and diverse collection of snakes in the United States, housing, and \$55/week to cover expenses. Personal transportation is recommended. A valid driver's license is required.

Big Cat Internship – Wildlife on Easy Street, Tampa, FL

For more information contact Scott Lope at 813-323-5991 or email at catfoto1@aol.com

Two (2) positions available for six-month internship at TAOS accredited non-profit big cat sanctuary. www.wildlifeoneasystreet.com **Responsibilities** (include but are not limited to): daily husbandry, exhibit cleaning, diet preparation, feeding, operant conditioning and behavioral enrichment for the following species: lions, tigers, leopards, cougars, lynxes, servals, caracals, bobcats, lemurs and other exotic animals. We provide invaluable hands-on experience, on-site housing and utilities, safety training and educational materials. Advanced training and long-term employment opportunities exist for the right candidates. **Requirements:** applicants must be willing to work six days a week, some holidays and follow strict safety guidelines. Hard work ethic and love of animals more important than degree.

Internships - The Florida Aquarium, Tampa, FL

Internships are available in Animal Health, Animal Programs and Husbandry departments. Internships available year-round for varying lengths of time and can be tailored to the individual student's needs. Internships are unpaid but provide valuable hands-on experience. Interested persons should send resumé to: Human Resources, 701 Channelside Dr., Tampa, FL 33602. For more information visit our website at www.flaquarium.org **Responsibilities:** food preparation, feeding, cleaning enclosures, assist with medical procedures, animal observations, daily record keeping, enrichment activities, assist with training sessions and shows.

Zoo Design Internship - ZooLex, Vienna, Austria

In 2002 the ZooLex Zoo Design Organization started to offer internships. Carlyn Worstell was our first intern. She finished her internship with the ZooLex Zoo Design Organization in September 2003 and is now working with the Wildlife Conservation Society at Bronx Zoo. We offer internships in Vienna, Austria. Interns who stay for a few weeks only, mainly work on the ZooLex Gallery. Interns who stay longer also complete a research project. You will find more information on ZooLex internships here: <http://www.zoolex.org/intern.html> < ZooLex Zoo Design Organization is a non-profit organization registered in Austria. ZooLex runs a professional zoo design website and distributes a newsletter. More information and contact: <http://www.zoolex.org/home.html>

The following three (3) internship opportunities are available at the New Jersey State Aquarium - The New Jersey State Aquarium husbandry department is currently holding open enrollment on all our internships.

Avian Internship

Interested candidates should submit a cover letter and resumé, transcripts, three (3) letters of recommendation, and an application from our website at www.njaquarium.org. Please submit materials to: New Jersey State Aquarium, c/o Kyla Fox, One Riverside Drive, Camden, NJ 08103. Become familiar with daily activities involving our colony of African penguins, exotic birds, and reptile collection. **Responsibilities:** Duties include food preparation, exhibit maintenance, and creation of enrichment devices. **Requirements:** Candidates should be comfortable with public speaking and have course work in biology/psychology. Must be able to work outdoors and lift 50 pounds. Interns are required to complete a minimum of 120 hours and must be registered for college credits in either a two or four-year school. Internships may be completed during spring, summer, or fall sessions. All intern positions are on a volunteer basis and are unpaid.

Marine Mammal Internship

Interested candidates should submit a cover letter and resumé, transcripts, three (3) letters of recommendation, and an application from our website at www.njaquarium.org. Please submit materials to New Jersey State Aquarium, c/o Collette Caprio, One Riverside Drive, Camden, NJ 08103. Learn daily activities involving animal care and training with our Seal Team. **Responsibilities:** Duties include food preparation, exhibit cleaning, creating enrichment devices and observing training. **Requirements:** Candidates should be comfortable with public speaking, have course work in biology/psychology, prior animal experience, be able to work outdoors, and lift 50lbs. Interns are required to complete a minimum of 120 hours and must be registered for college credits in either a two or four-year school. Internships may be completed during spring, summer, or fall sessions. All intern positions are on a volunteer basis and are unpaid.

Fish and Invertebrate Internship

Interested candidates should submit a cover letter and resumé, transcripts, three (3) letters of recommendation, and an application from our website at www.njaquarium.org. Please submit materials to New Jersey State Aquarium, c/o Nicole Grandinetti, One Riverside Drive, Camden, NJ 08103. The Fish and Invertebrate department offers internships each semester to qualifying candidates. **Responsibilities:** The intern's main responsibilities will be assisting the biologists with their daily duties including exhibit and holding tank maintenance, food preparation, feeding, filter maintenance, and learning all aspects on maintaining saltwater exhibits. **Requirements:** Interns must complete 120 hours within the semester working two eight-hour days. The typical hours for the day are from 7:30am to 4:30pm. Interns are also required to be registered for credits through a two or four-year institution. All Interns work under a volunteer basis and are unpaid.

The Mauritian Wildlife Foundation Volunteers - The Mauritian Wildlife Foundation (MWF) is a charitable conservation NGO based in Mauritius working hard to save the endemic fauna and flora of the Mascarenes (Mauritius, Rodrigues and surrounding islets). It is best known for its successes, through partnership with the Durrell Wildlife Conservation Trust's Jersey Zoo, in recovering the Mauritius kestrel from only four birds, the pink pigeon from only a dozen birds and, most recently, the echo parakeet from about 20 birds. Pigeon and parakeet work is intensive and ongoing and new projects are under development for endangered endemic songbirds and reptiles. MWF operates a team of up to 100 or more staff and volunteers working on bird, reptile and plant projects. The MWF is currently seeking new volunteers to work on the pigeon project immediately and other projects (passerines and echo parakeets) in September 2004. Volunteers are accepted for six month stays after which they may be asked to join the team for a longer period, according to requirements and performance. Volunteers are expected to finance their own travel, comprehensive insurance, (including repatriation), and living expenses while in Mauritius (the latter approx £150 per month) but receive free accommodation and access to basic office facilities including fax, telephone and Internet. Work on the pink pigeon project consists of supplementary feeding, predator control and monitoring, data collection on breeding and feeding behaviors of the pigeons and may include capture, handling and ringing experience, disease monitoring and control and radio-telemetry. Volunteers are based in basic, but adequate, field stations for five days each week and have the use of a communal residence during the weekends. Volunteers needed for echo parakeet and passerine breeding seasons (Sept through February) will be based either at our residential house near our captive breeding facility and will be largely involved with hand-rearing, captive management and potentially re-introductions, or at one of the field stations involved with nest monitoring, nest manipulation, release and monitoring of wild populations. Any applicant should be hard working, self-motivated and easy going. They must be able to live in isolated and sometimes claustrophobic conditions while maintaining good humor, tolerance of others and, above all, high standards of work. They must have no concerns about humane predator control and be physically and mentally fit and strong. The successful applicant will experience at first hand, a cutting-edge, conservation initiative, learning all the necessary skills and methods, aimed at saving some of the worlds rarest bird species from extinction. Applicants should send (preferably by email) a letter of application and full CV, including two (2) references, (with contact details including telephone and email) to: David Wills, Pink Pigeon Project Coordinator, Mauritian Wildlife Foundation, Grannum Road, Vacoas, Mauritius; Fax (230) 697 6512; dwills@mwf.intnet.mu

More Zoo vacancies can be seen by visiting:

American Zoo and Aquarium Association - Job Listings

<http://www.aza.org/JobListings/>

American Association of Zoo Keepers - Opportunity Knocks

http://www.aazk.org/aazknew/animalKeepersForum/opportunity_knocks.asp

European Association of Zoos and Aquaria - Vacancies

<http://www.eaza.net>

Berufsverband der Zootierpfleger e.V

<http://www.zootierpflege.de>

AAZK Membership Application

check here if renewal []

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Address _____

City _____ State/Province _____ Zip/Postal Code _____

Country _____ Email _____

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☐

\$40.00 Professional

Full-time Keepers

☐

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*Renew for 2 years & Save!
Full-time Keepers Only*

☐

\$35.00 Affiliate

Other staff & volunteers

☐

\$35.00 Associate

*Those not connected with
an animal facility*

☐

**\$65.00 or up - Individuals
Contributing/U.S.**

☐

\$125.00 or up

Institutional/U.S.

*Organizations/Institutions
(requires Board approval)*

☐

International Members

\$55.00 International

*All members outside U.S. &
Canada regardless of category*

Canadian Members

☐

\$40.00 Professional

Full-time Keepers

☐

\$70.00 Professional

*Renew for 2 years & Save!
Full-time Keepers Only*

☐

\$40.00 Affiliate

Other staff & volunteers

☐

\$40.00 Associate

*Those not connected with
an animal facility*

☐

**\$65.00 or up - Individuals
Contributing/Canada**

☐

\$125.00 or up

Institutional/Canada

*Organizations/Institutions
(requires Board approval)*

☐

Library Only

\$40.00 Library

*Available only to public
& university libraries*

Zoo Affiliation (if any) _____

Zoo Address _____

Title _____

Work Area _____

☐ My check is enclosed (AAZK, Inc.) ☐ Please charge my credit card

MASTERCARD VISA Card # _____ - _____ - _____ - _____

Name on card _____ Expiration date _____

Signature _____

Mail this application to: AAZK Administrative Offices, 3601 S.W. 29th, Suite 133 Topeka, KS 66614-2054. Make checks/money orders payable to AAZK, Inc. Must be in U. S. FUNDS ONLY. Membership includes a subscription to *Animal Keepers' Forum*. The membership card is good for free admission to many zoos and aquariums in the U.S. and Canada.

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**AMERICAN
ASSOCIATION
of ZOO KEEPERS**

3601 S. W. 29th St.
Suite 133
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